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"Even though people think of Silicon Valley as a big meritocracy, I don't think that's how it works"

p40



"Many large, older companies are caught up in a tsunami of baby boomers retiring" "You know what?
We should probably
only talk about criminal
justice and whiskey"

"We're like living symbols that something has gone really wrong"

Bloomberg Businessweek

January 25 — January 31, 2016

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Opening Remarks The bears say down, the bulls say up. The numbers say ...



How the cover gets made

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"The cover story is on tech companies that are struggling to diversify their employee pool."

"What kind of companies?"

"Large ones in Silicon Valley, like Google."

"So much for the technocratic utopia. We should probably photograph some of the people who are trying to get hired."



"Love this photo."

"What should we do for the headline?"



"Do you think people will misread it as 'Coders LIKE Us'?"

"No...but it would be terrible if they did."

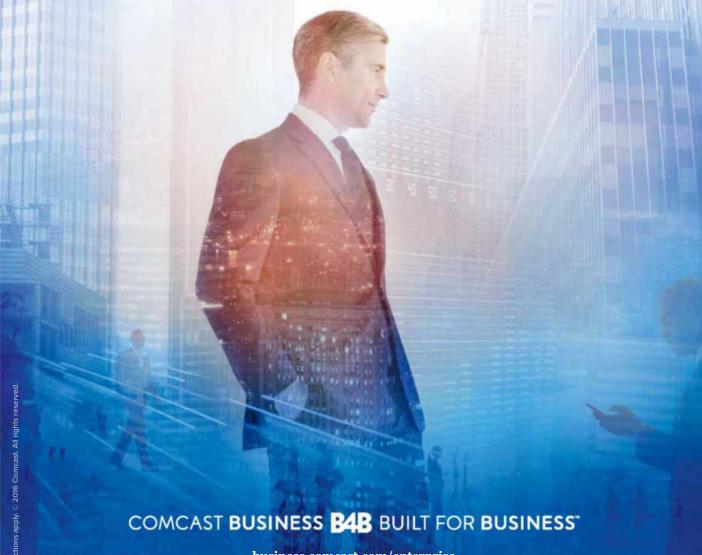


YOU CAN'T BUILD THE BUSINESS OF TOMORROW ON THE NETWORK OF YESTERDAY.

It's no secret: business has changed—in every way, for every business. Modern technologies have brought new opportunities and new challenges, like BYOD and a mobile workforce, that old networks just weren't built for. While demand on these networks has increased exponentially, networking costs have skyrocketed and IT budgets haven't kept pace.

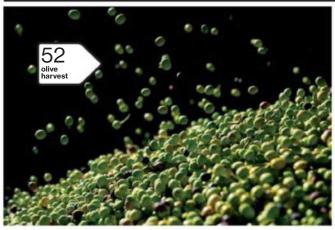
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S&P 500-stock index

1/4/2013

Talk of a downturn is in the air, and the numbers are squiggly

By Peter Coy

People who ordinarily ignore economic forecasters are eager for whatever intelligence they can glean. What's grabbed their attention is the January plunge in the U.S. stock market 1, the worst two-week start on record. If the bears are right, profits and economic growth in general are going to be weak in 2016. Even if the bears are wrong, the drop is making investors less willing to spend. Nobody knows what's going to happen next. "The fact that economists have a particularly poor track record of calling turning points in growth only adds to underlying anxiety," Joseph LaVorgna, chief U.S. economist at Deutsche Bank Securities, wrote to clients on Jan. 19.

Weakness is emanating from China, where pessimism has driven stock prices down 40 percent since June 2, vs. a decline of 12 percent in the U.S. With trade declining, there's

in the first two weeks of the year

1/15/2016

Chinese stocks

Shanghai Shenzhen CSI 300 Index



Shipping rates Baltic Dry Index

O 1/31/2013 12/31/2015 O 1/31/2015 O 1/31/

12/2015

Import prices

Change in U.S. import price index (excluding petroleum) from the year before

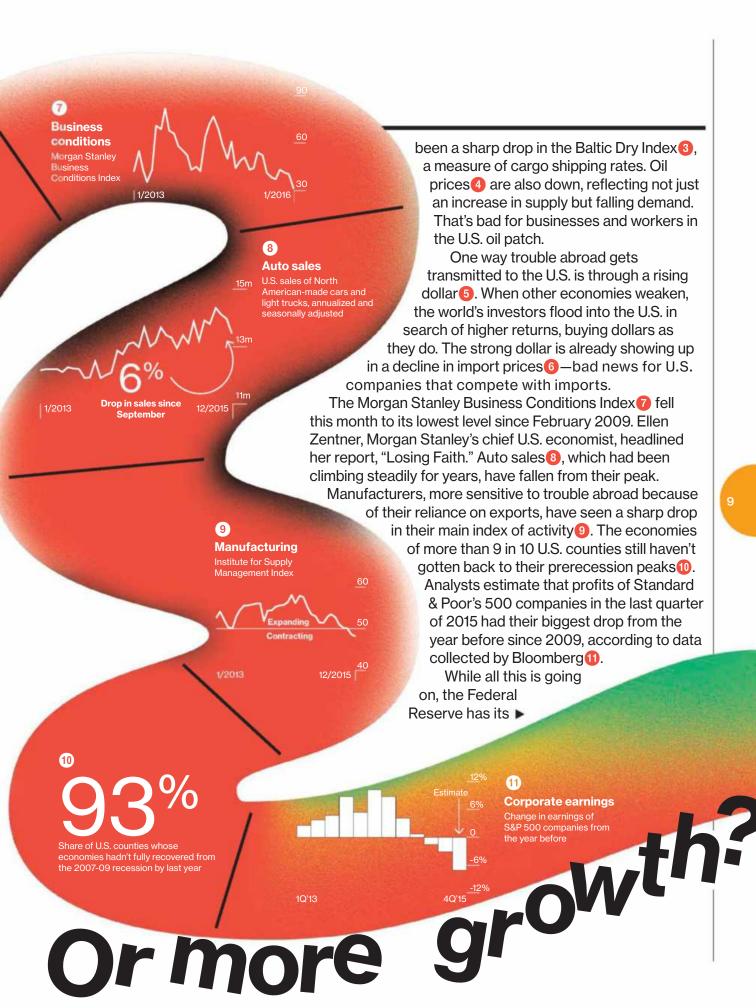
5 Dollar U.S. Dollar Index

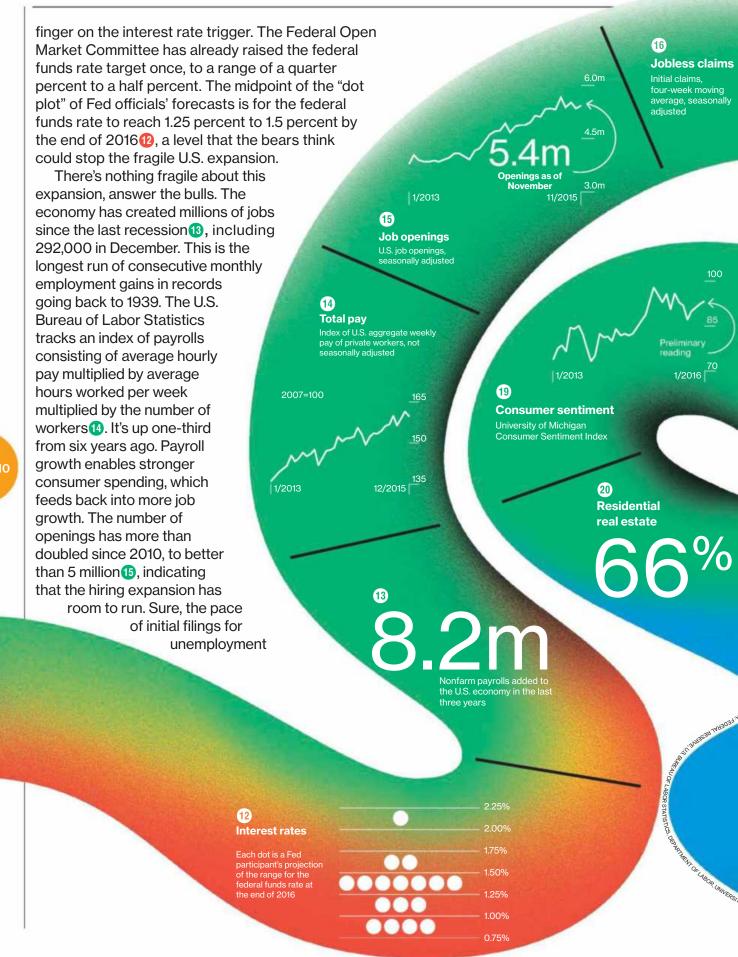
Rise in the index from Jan. 1, 2013, through Jan. 19, 2016

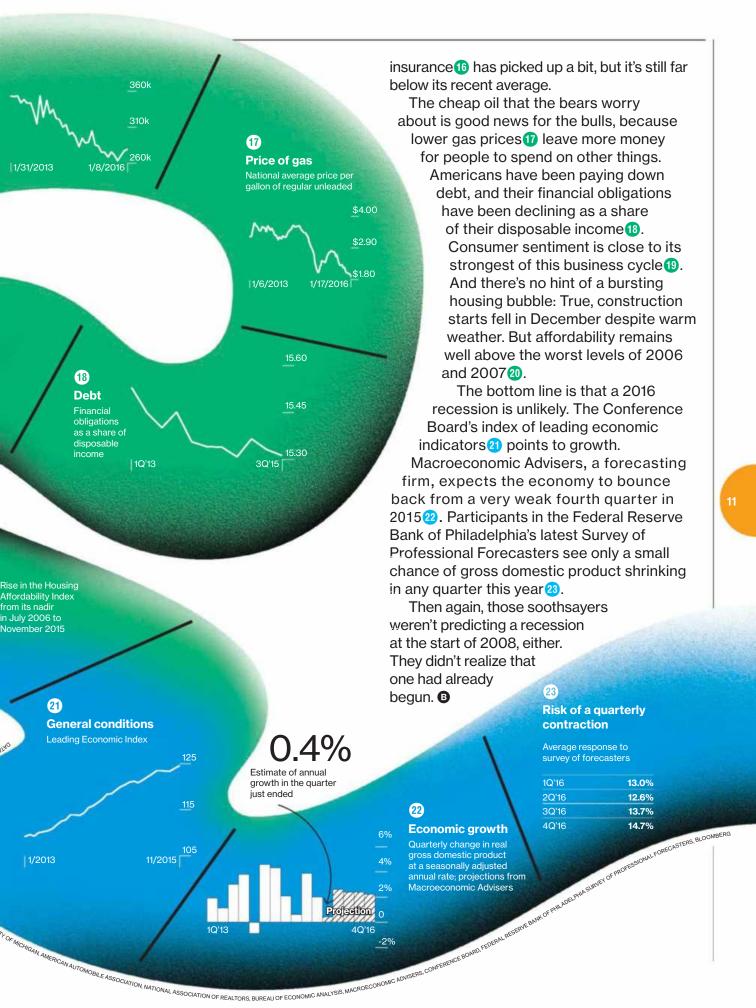
> Price of a barrel of oil West Texas Intermediate

1/4/2013

1/15/2016







Bloomberg View

To read Adam Minter on missing Chinese shoppers and Cass Sunstein on the need for regulatory reform, go to

Bloombergview.com

Europe's Foul Plan on 'Clean Diesel'

The raid on Renault focuses attention on EU moves to relax standards on nitrogen oxides



French investigators have raided offices of Renault, including those involved in regulatory certification and engine control systems. Testing by a watchdog group had already shown that the company's cars were emitting as much as 25 times the levels of nitrogen oxides allowed by the European Union. Nitrogen oxides, common in diesel exhaust, are carcinogenic and a main component of smog. They also contribute to climate change, albeit not as much as the carbon dioxide from gasoline engines. More than half of new cars sold in Europe are diesels.

Speculation is widespread that the Renault raid is meant to find evidence of a "defeat device" such as that used by Volkswagen to game U.S. emissions testing. Device or not, if it turns out Renault's cars are spewing more emissions than were measured by Europe's easily outmaneuvered testing lab system, they need to be taken off the road. Unfortunately, Europe seems intent on keeping them there.

Largely at the behest of Germany, which has the world's fourth-largest auto industry, the European Parliament has been moving to water down NOx standards severely. Under a proposed plan, cars would be able to exceed future NOx limits in on-road testing by as much as 110 percent until January 2020, and by 50 percent thereafter. A vote on the diluted standards has been delayed until early February, after the body's environmental committee overwhelmingly recommended rejecting them. This will give manufacturers more time to make their case.

A Renault scandal seems unlikely to change this political picture, in part because the French government owns 20 percent of the company. But even if the EU wants to cling to its dream of "clean diesel," European countries and cities shouldn't. The German government, in particular, should rethink its decision to reject a proposal to raise taxes on diesel cars. Many European cities have their own clean-air laws that could be applied to bus and taxi fleets or to keeping polluting cars out of crowded urban centers, as Paris has pledged

to do by 2020. Such local restrictions would put pressure on carmakers to lower all emissions. And where both national and local authorities refuse to act, environmental groups can look to the legal system, where they've had success before.

The potential downside of curbing nitrogen oxides is that carmakers may simply switch back to carbon-dioxide-belching gasoline-powered cars. A better strategy would be to invest in truly clean, high-mileage diesel engines. Or, better, to follow the market toward hybrid and electric vehicles, sales of which boomed in Europe last year even as they fell in the U.S.

In the end, it may be up to consumers to force change. After all, while climate change caused by carbon dioxide is a somewhat abstract concept, the effects of NOx emissions aren't just in front of their very eyes, but in them.

Trump Raises a Rumpus in Britain

A petition to ban him is debated in Parliament, but such prohibitions don't always hold up

Surely the British Parliament had a better way to spend three hours. On Jan. 18, MPs debated the merits of a petition signed by more than 500,000 Britons demanding that the government block Donald Trump from setting foot on their sceptered isle. It might be the worst idea since London Mayor Boris Johnson decided to ride a zip line during the 2012 Olympics—and to his credit, Prime Minister David Cameron's government has declared there's no chance of the ban happening.

British law requires Parliament to consider for debate any petition receiving 100,000 or more signatures. The petition's supporters are appalled—understandably—at Trump's demagogic tendencies. His pandering to antiforeign sentiment, while odious, has earned him a following among Americans. Britons aren't seeking to bar those who say quietly what Trump says loudly, and for good reason: Democracies require tolerance of widely diverging political viewpoints.

British policy does allow the Home Office to bar foreigners who engage in "unacceptable behaviours." Among those caught in this dragnet is conservative American radio host Michael Savage, whose nativist views have been deemed a threat to public security by the U.K. Still, a 2009 British ban on Geert Wilders, the Dutch politician who wants to prohibit the construction of mosques and the selling of the Quran, didn't withstand judicial scrutiny, and Britain appears to have survived his subsequent visit unscathed. Likewise, it has survived visits from Trump, who owns two golf courses in Scotland and has traveled to the U.K. many times without incident. (He never travels without controversy, which isn't quite the same thing.)

Governments are justified in barring foreigners who advocate or incite violence and terrorism. But that power ought to be used with the greatest of care, not in response to petitions fueled by political passions. **3**



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PROMISE MILLION BARRELS A DAY

- Now free to sell oil, Iran has set itself a huge goal. But are its oil fields in condition to reach it?
- "Valves get rusty.... It's not just like turning the spigot from off to on"

Along the main road skirting the oil and gas hub in the Persian Gulf town of Assaluyeh, signboards still bear the names of foreign companies like Eni, Italy's biggest oil producer. But Eni hasn't started a project or made investments in Iran for more than five years because of international sanctions. Now that those restrictions have been lifted, the country wants overseas expertise and investment to return to help ramp up oil production and exports. But how well have the oil fields been maintained by Iran? That is a "huge unknown," according to Mike Wittner, Société Générale's head of oil market research. because most oil companies haven't had access to those fields for years.

Once OPEC's second-biggest

producer, Iran says it's ready to sell 1 million more barrels of oil a day this year. The deal Iran implemented with the U.S. and five other global powers on Jan. 16 opens the market for its crude. Oil Minister Bijan Zanganeh says the country can boost production by half a million barrels immediately by reopening fields the state oil company shut when sanctions kicked in. Iran will add another 500,000 barrels a day within months, he says. The specter of more oil helped spook a market already flooded with cheap crude. On Jan. 20 the price for West Texas Intermediate dropped 6.7 percent, to \$26.55 a barrel. Stock markets tumbled in response.

Analysts are skeptical Iran can achieve such an increase. Oil fields

depend on pressure inside a reservoir to help force crude out. As more oil is pumped, pressure eases and production declines. That's why oil companies need to continually find deposits, drill more wells, and work to maintain already operating fields.

"Simple things like valves get rusty or air gets into the well," says Nariman Behravesh, chief economist at energy consultant IHS. "These are not trivial matters, and it takes not just time but investment to revamp their production system. It's not just like turning the spigot from off to on." Restarting the same fields that were shut following sanctions will yield only 800,000 barrels a day at most in the next year, says Robin Mills, the Dubai-based chief

executive of consultant Qamar Energy who worked on projects in Iran as a geologist for Shell.

The head of the International Energy Agency is more optimistic. "Iran's older oil fields are in good shape," says Fatih Birol. "Without making any investments, Iran can easily lift production by 300,000 barrels a day within two months."

Forced to improvise during years of isolation, Iran's oil industry grew stronger, says Mostafa Khoei, managing director of Dana Energy, a big engineering company in Tehran. Exploration and development never stopped, though they slowed and grew more expensive. Local companies filled the void left by foreign contractors, while equipment purchases shifted from Europe to China. Iran now has at least four private companies with experience developing fields, and eight drilling companies. Before the sanctions, all offshore platforms were imported. Now, all of Iran's new platforms are homemade.

Sanctions cut Iran's exports to 1.4 million barrels a day on average in 2014, from 2.6 million barrels daily in 2011, according to the U.S. Energy Information Administration. To regain its No. 2 spot in OPEC and surpass Iraq, Iran eventually needs to add more than 1.7 million barrels of daily output. Saudi Arabia, OPEC's top producer, pumped 10.3 million barrels a day in December.

Preparations for the 500,000-barrel-aday increase include designating which of the country's tankers will carry the oil and transporting the crude from the fields to loading terminals, Amir Hossein Zamaninia, deputy oil minister for international and commerce affairs, said in an interview in Tehran. State-run National Iranian Tanker is still working with European insurers to set up coverage for the country's exports, says Nasrollah Sardashti, the company's commercial affairs director.

Iran will be selling into a market that might not want all its oil. Zamaninia says exports will happen in a "managed way to minimize the negative impact" on prices. He did not detail how the country would achieve that. At Davos, Iranian President Hassan

Rouhani's chief of staff, Mohammad Nahavandian, told reporters who raised the same issue, "I think you'll have to wait and see."

—Anthony DiPaola, Hashem Kalantari, Peter Waldman, and Matthew Philips

The bottom line Iran wants to recover its place as OPEC's No.2 producer, but first it has to make sure it can meet ambitious production goals.

Growth

Taiwan's New Leader Inherits a Mess

- The island's economy is deeply intertwined with China's
- "I won't provoke, and there won't be any accidents"

It was a total victory for Tsai Ing-wen. Not only did the Taiwanese opposition leader trounce the candidate of the ruling Kuomintang on Jan. 16 to become the island's first female president but voters also rewarded her Democratic Progressive Party with its first parliamentary majority.

Even as she celebrated, Tsai was addressing worries that her party's proindependence stance would hurt the economy by alienating its biggest trade partner, China. "I won't provoke, and there won't be any accidents," she told supporters on election night.

China and Hong Kong account for about 40 percent of Taiwan's exports, making the mainland's slowdown especially painful. Taiwanese exports to China and Hong Kong dropped 12.3 percent last year. Taiwan's economy grew only 0.9 percent in 2015, according to economists surveyed by Bloomberg, down from an earlier forecast of 1.6 percent. The Kuomintang strategy of boosting growth by improving mainland ties turned off many Taiwanese. The KMT is "too close to China," says Tsai supporter Li Yu-ju, a graduate student. "Taiwan's economy overrelies on China."

Tsai, a graduate of Cornell Law School, wants to reduce that dependence. The island is in economic crisis. Slumping global demand for PCs imperils local companies such as Acer and Asustek that flourished during the PC boom. Smartphone maker HTC, once the premier example of a post-PC Taiwanese tech company, now has a market share of about 1 percent. Consumers around the world prefer Apple, Korea's Samsung, and Chinese brands Xiaomi and Huawei.

Mainland electronics companies have an increasing number of homegrown suppliers, prompting worries of what the Taiwanese call a "red supply chain" that will make Taiwan's companies irrelevant. In 2014 mainland chipmakers provided 29 percent of China's semiconductors, up from 20 percent in 2010.

"Many Taiwanese companies find it is too late to beat China and have no choice but exploring ways to participate in China's rise," Sanford C. Bernstein analysts Mark Li and David Dai wrote in a Jan. 4 report. Beijing-based Tsinghua **Unigroup** in October said it had agreed to pay \$600 million for a major stake in **Powertech Technology**, a chip packaging and testing company based in Hsinchu, Taiwan's tech hub. In December, Tsinghua Unigroup unveiled plans to spend \$2.1 billion for 25 percent positions in two other Taiwanese chip companies, Siliconware Precision Industries and ChipMOS **Technologies.** Taiwan's regulator in charge of foreign investment has said approval of all three is unlikely. During the campaign, Tsai warned of the threat mainland investment poses for Taiwan. The government will get around to easing restrictions on mainland investment in the island's chip companies, Li and Dai argue, but the chance of that happening soon is "nearly impossible."

Some Taiwanese see the whole island as a lab. "Taiwan is not so big, so we are able to use the nation as a test bed for new, innovative services," says Y.C. Chang, managing director of Far

Toll Collection, part of the

Eastern Electronic



Global Economics

 up with software services company Systex, server maker Mitac, and industrial motor producer Teco Electric & Machinery to design and operate an electronic toll collection system for Taiwanese roads, which started service in 2013. Today, Far Eastern is advising Vietnam on a toll system and has signed memoranda of understanding with Belarus and Kazakhstan.

Tsai spoke on the campaign trail of the need to focus on potential growth industries such as biotechnology, Webconnected devices, and defense. Tsai's running mate, Chen Chien-jen, is a Johns Hopkins-educated researcher in epidemiology and genomics, and the pair want to promote Taiwan as a center for medical research. Thanks in part to talk by Tsai and her running mate, Taiwan's biotech stock index has gained 1 percent over the past three months, compared with an 11 percent slump for the broader market.

Beijing is counting on Taiwan's economic weakness to keep Tsai in line. "Regardless of its relationship with the mainland, it's impossible for the DPP to reverse Taiwan's stagnant economy," editorialized the Global Times, a paper controlled by the Communist Party's People's Daily. "No matter what kind of political philosophy Tsai espouses, she has to face up to the reality. She should know she has limited options."

—Bruce Einhorn, with Adela Lin

The bottom line China and Hong Kong buy 40 percent of Taiwan's exports, making it hard for the island to diversify away from China's sphere.

Regimes

A Venezuelan Dissident **Speaks Out From Jail**

- Leopoldo López pressured the government into calling elections
- "He has no concept of collective decision-making"

When the Venezuelan government threw Leopoldo López into prison two years ago, it sought to silence a charismatic opponent in an increasingly angry country. It didn't work. A 30-day hunger strike by López last vear helped force the ruling socialists

to hold legislative elections that have created a huge antigovernment majority. One Wednesday in January at Mass, guards told López to stop talking politics. He'd just given an emotional reading of the psalm for the day, which referred to preaching "righteousness in the great con-

gregation." "When he wants to send a message, he's full of energy and force," says his lawyer and political adviser, Gustavo Velázquez.

What Venezuelans fear is that López is better at creating politicial drama than building consensus. The 44-yearold scion of a family that goes back to the country's 1811 founding has an elite U.S. education, movie-star looks, and untethered ambition. He's sometimes described as a cross between John F. Kennedy and Nelson Mandela. With

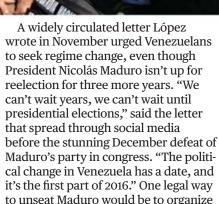
the new congress hoping to free him soon, the question on many minds is: Can López, who leans slightly left of center, lead a long-fractured opposition?

Some are skeptical, saying that the dozen or so parties that make up the opposition, from Marxist to the center right, require something López is not: a unifier. "He's a warrior

and, God willing, he will be freed," says Liliana Hernández, a former opposition congresswoman who worked closely with López in several different parties. "But he is his own hierarchy. He has no concept of collective decision-making."

Those closest to López say he has undergone a profound change in prison. One of his lawyers, Juan Carlos Gutiérrez, says that rubbing elbows with criminals and underpaid soldiers in the military facility has made López calmer, more philosophical, and more focused. He says López has told him more than once that if it weren't for the suffering of his wife and children, he would be thankful for this experience.

Gutiérrez and others who have visited him say López has grown more policyoriented, expressing the desire to build a political coalition rather than to lead a popular movement. His lawyers have seen him poring over reports on agriculture and oil production as well as books on Venezuela's political history. They say he's written policy papers that haven't been published.



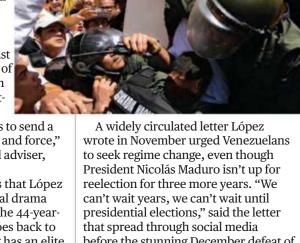
a recall referendum.

Thanks to its victory, the opposition in congress has wide-reaching power to challenge Maduro, who took over in 2013 after the death of Hugo Chávez, the charismatic leader of Venezuela's leftist revolution. But the government has questioned the legiti-

macy of three winners of opposition seats, leaving Maduro's rivals short of the supermajority they could use to upend the country's balance of power. A supermajority, at least two-thirds of congressional seats, empowers the opposition to create a new constitution, a process that automatically removes the sitting president.

Like other countries that rely on oil, Venezuela has had a disastrous year with its state budget, and its subsidies for everything from gasoline to flour are under severe strain. Violent crime, endless lines for basic goods, and corruption have drained Venezuelans' of faith in their leaders. If López is released, he may be able to turn this moment into his own.

In 2002, as a coup attempt against Chávez was taking place, López, then mayor of Chacao, an upscale section of Caracas, seemed to take sides by assisting in the televised arrest of a Chávez cabinet member, an event López's critics still cite. "He never won over the people," says Roque Valera, a



López turning himself in, February 2014

When he wants to

send a message, he's full of energy

and force.

Gustavo Velázquez, political

adviser to López

OPEZ: JORGE SILVA/REUTERS; ILLUSTRATION BY 731; TIRIAC; LAURENT GILLIERON/EPA/CORB

community organizer. "He's only been interested in power."

Then, in 2006, López's disagreements over the direction of Justice First, the political party he helped found, led him to leave. Following a brief stint at another opposition party, he created Popular Will, a center-left movement. But after failing to unseat both Chávez and then Maduro, and losing municipal elections, López broke away again. In early 2014 he incited countrywide protests, known as "the exit," aimed at pressuring Maduro to resign. The protests turned violent, and soldiers fired at demonstrators. Three people died, and the government charged López with inciting violence; he said he was innocent. Political moderates called the protests reckless and blamed López. He and his supporters countered that protests were needed to draw foreign attention to the government's increasing authoritarianism. Now the opposition and López have their best chance in years of checking Chavismo. But they have to stop a revolution without starting a civil war. - Andrew Rosati

The bottom line Venezuela's stability may depend on how well López has learned to channel his energies into effective political action.

Crackdowns

Romania Suffers From A 'Signature Strike'

- An anti-bribery campaign is delaying big-ticket projects
- "Infrastructure has been a huge area of corruption"

In August, Ion Tiriac, a former professional tennis and hockey player-turned-businessman, summoned reporters to tell them he was shelving plans to donate €2 million (\$2.2 million) to build a new ice rink in Bucharest. Tiriac told journalists he had spent more than two years trying to line up the necessary government approvals, but a sweeping crackdown on corruption has made civil servants reluctant to sign even routine documents. "They are afraid to even breathe because it may lead to the anticorruption prosecutors' office," the businessman says he was told.

Romania's anticorruption agency is reviewing more than 10,000 cases, and hundreds of public officials are facing criminal trials, the result of a campaign spearheaded by Laura Codruta Kovesi, an aggressive prosecutor who was appointed to lead the department in 2013. The operation, reminiscent of Italy's nationwide Clean Hands campaign in the 1990s, has brought down several high-ranking politicians, including former Prime Minister Victor Ponta, who resigned in November after being charged with money laundering and complicity in tax fraud; former Bucharest Mayor Sorin Oprescu, who was arrested in September and charged with bribe-taking; and former Finance Minister Darius Valcov, who resigned last March amid allegations that he used funds obtained through influence-peddling to amass a hidden cache of gold bars and paintings by Picasso and Andy Warhol. All three have denied the charges against them.

As the investigations continue, long-planned public works projects are stalling. Dietmar Dumlich, the European Investment Bank's representative for Romania, says the bank has approved €1.7 billion in loans for infrastructure projects but can't get anyone to sign the loan documents. "We find ourselves in limbo," he says. The country badly needs the funds: The World Economic Forum ranks Romania 85th of 144 countries for the quality of its infrastructure-the worst of any European Union member state. Its roads are deemed to be in worse shape than those in Bangladesh or Cameroon.

One reason for the sorry state of Romanian roads is that money allocated for improvements has often ended up in the pockets of politicians and their cronies, says Victor Alistar, who heads the local chapter of anticorruption group Transparency International. "Public investment related to infrastructure has been a huge area of corruption," he says.

Romania's Finance Ministry reported in November that only half the public funds budgeted for capital investment last year had been spent, because of what it called "inefficiency." Lia Olguta Vasilescu, mayor of Craiova, a city in the country's southwest, put

it more bluntly in a speech last year, saying Romania's mayors had gone on a "signature strike" for fear they'd be accused of violating procurement laws. Justice Minister Raluca Pruna, however, told *Bloomberg Businessweek*: "Any state worker who correctly applies the law has nothing to fear in doing his job."

The story of Tiriac's skating rink illustrates the problem. In an October interview on Realitatea TV, the

10k

The number of cases under review at Romania's anticorruption agency former sports star who coached Wimbledon champions Boris Becker and Goran Ivanisevic said he had approached Oprescu, the former Bucharest mayor, in 2013 with an offer to replace the city's

existing ice rink. More than half a century old, the rink has been closed for several years because of unpaid utility bills. Tiriac said he pledged the €2 million on the condition that the city would provide the land and seek EU funding to

cover some of the costs. The mayor was enthusiastic and helped identify "a superb site near the city hall," said Tiriac, who has interests in banking, real estate, and auto dealerships. But the businessman later learned that a prefect appointed by the national government had balked at approving the plan. It took six months to obtain the necessary signatures and secure approval from the city council. Yet several weeks after the vote, the mayor informed him that the council secretary "forgot to publish" the decision, rendering it invalid. Tiriac is now planning to build the rink himself on land he already owns about 10 miles outside Bucharest.

—Carol Matlack, with Andra Timu and Irina Vilcu

The bottom line Romanian officials' fear of being charged with corruption is delaying billions in European Union loans and other investments.



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Everyone's taking a bite out of Pizza Hut 20

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Chowing Down On Boomers' Brains

Companies are working to ensure millennials are prepared to step into leadership roles

Many are "unaware of how much tribal knowledge" retirees take with them

Vikram Ravinder was a little nervous as he faced the board members of Chicago nonprofit Bunker Labs in a conference room in early December. The 29-year-old **Deloitte** senior consultant for strategy and operations was pitching a plan that might help Bunker secure funding for a program enabling veterans to become entrepreneurs.

Ravinder developed the pitch, under Deloitte's pro bono program, with his mentor, Jonathan Copulsky, the company's chief marketing and chief content officer. The two meet regularly as part of a push to have senior managers train junior employees. Copulsky, who will retire in June 2017 when he reaches the company's mandatory retirement age of 62, has mentored several younger Deloitte executives. "I was able to put this guy in a position, give him enough 'got your back,' but also give him the freedom that he could be successful and coach him as opposed to directing him," Copulsky says.

Ravinder's presentation helped the nonprofit secure new funding. "I see how he approaches clients," Ravinder says of Copulsky. "Millennials bring data and analytics, but boomers have experience they can rely on when the data isn't sufficient."

Companies from Deloitte to defense contractor **BAE Systems, General Motors,** and **General Electric** are scrambling to ensure millions of younger managers from the so-called millennial generation—those born from roughly 1981 to 1997—are ready to step into leadership roles as baby boomers bow out of the workforce. About 10,000 reach retirement

age every day. "Many large, older companies are caught up in a tsunami of baby boomers retiring and are unaware of how much tribal knowledge they are taking with them," says Dorothy Leonard, professor emeritus at Harvard Business School. Leonard's firm, Leonard-Barton Group, developed knowledge-transfer programs at several GE divisions and at the non-profit Educational Testing Service

Until last year, boomers made up the largest portion of the U.S. population, and Generation X represented the biggest share of the workforce. Now millennials lead in both categories: They hold about 20 percent of all management jobs, up from 3 percent in 2005, according to U.S. Bureau of Labor Statistics data.

several GE divisions and at the non-profit Educational Testing Service.

GE runs programs in its GE Hitachi Nuclear Energy and GE

1

DATA: CRITICAL KNOWLEDGE TRANSFER: TOOLS FOR MANAGING YOUR COMPANY'S DEEP. WALTER SWAP, AND GAVIN BARTON. HBR PRESS, 2015

Companies/Industries

Transportation units, among others. Retaining technical knowledge and capabilities is a focus, says GE Global Research spokesman Todd Alhart. ETS set up knowledge-sharing partnerships between key personnel and colleagues within the same departments, to "deepen bench depth," according to Candyce Wright-Citrone, who's responsible for diversity and development

data and analytics, but boomers have experience they can rely on when data isn't sufficient." -Vikram Ravinder, Deloitte senior consultant

initiatives in ETS's Chief Learning Officer Group. Action plans, based on individual learning goals established for participating employees, are followed over several months. GM uses educational train-

ing and mentorships to help bridge the generation gap. It wants its leaders to function more as coaches, the automaker has said. And Bank of America has a so-called onboarding program to help new executives adapt to the corporate culture and learn from senior executives.

"In the next 10 to 15 years, we're going to have the greatest transfer of knowledge that's ever taken place," says Chip Espinoza, director of organization psychology at Concordia University Irvine. An effective way to handle the shift, he says, is for a company to create relationships between the generations.

"It's clearly an emerging area that everyone is dealing with," says Mike Preston, Deloitte's chief talent officer. Within a decade, maybe sooner, he says, there will be no boomers in Deloitte's top management.

BAE, a multinational defense and

Plugging the Brain Drain

large U.S.-based companies say:

Is the threat of losing business-critical expertise more or less an issue than it was five years ago?

How frequently do you lose a top manager or other expert

without a successor?

Catie Perrella, 26, who coordinates parts production for the F-15 Eagle fighter jet, is part of BAE's leadership development program. "You can take knowledge from position to posi-

tion," says Perrella, who joined the

aerospace company, similarly has

the company's advanced learn-

ing manager. BAE adapted a NASA

program developed a decade ago

been preparing for the retirement cliff

for several years, says Andrew Muras,

when the U.S. space agency started to

lose expertise from the lunar landings

as senior engineers retired. Realizing

it would need that knowledge for mis-

sions to Mars, the agency asked engi-

neers who'd worked on the Apollo

mission to share what they knew in

When BAE learns that an employee

with deep institutional knowledge plans

to retire, whether in a few months or a

couple of years, a knowledge-transfer

group of about a half-dozen people of varying ages working in the same area is

formed. The teams meet regularly over

Younger workers elicit tips, and in some

tasks to junior employees. The program

began as a pilot in 2013; during the past two years, BAE has expanded it across

One manager who's scheduled to

retire in April demoted himself in the

process and now works as an assistant

to an employee who recently joined

the company from the U.S. Navy to

do the job the manager once held.

According to Muras, the two worked

nance and repairs on an amphibious

ship for the Navy, a contract the older

worker had run for 11 years. The con-

tract has since been renewed, with the

newer employee overseeing the work.

knowledge-transfer efforts by looking

at variables such as direct and indi-

rect costs and productivity. "We're

Devoting more time preparing mil-

lennials for leadership roles may

also encourage them to stay with

age 55-64, according to BLS data.

the company. The median tenure of

workers age 25-34 is about three years, compared with 10.4 years for workers

saving on average between \$120,000

to \$180,000" per project, Muras says.

BAE has quantified the payoff of its

together on a bid to handle mainte-

months to talk and exchange advice.

cases older ones gradually hand off

the company. It eventually wants to

hold as many as 60 sessions a year.

meetings with new engineers.

company in 2011 and is enrolled in an MBA program at Boston University. "I've had a lot of friends who leave a company after two or three years, but BAE has so many opportunities within the same walls," she says, that she can advance her career by staying put. –Jeff Green

The bottom line Companies that don't plan for generational management shifts risk falling behind and losing out to their competitors.

Restaurants

Pizza Hut's Shrinking Piece of the Pie

- Beset by new rivals, the chain is dressing up for today's diners
- It's "kind of in the middle. The middle is a tough place to be"

For more than a half-century, **Pizza** Hut has been a symbol of America's hearty appetite for the Italian staple. But these are lean times for the company's red-roofed eateries. It's not that demand for pizza is waning in the U.S. It's that Pizza Hut's slice of the pie is shrinking.

To reverse that decline, Pizza Hut, owned by Yum! Brands, is adopting a plan that borrows from the upstarts nibbling at its market share. Two restaurants in Texas are the testing ground for innovations including ovens that can deliver pies faster, and sleeker interiors with bar seating for customers to hang out while enjoying a beer.

A growing number of fast-casual restaurant chains seem to have a better line on what kind of pies Americans want and how they want them. Blaze Pizza, for one, has a customize-asyou-watch experience that today's diners have grown accustomed to at eateries such as Chipotle Mexican Grill and Five Guys Burgers & Fries. And takeout and delivery customers increasingly prefer to tap in their orders on mobile phones and send them to a Web-focused joint such as Domino's Pizza. "Changing their positioning with consumers is going to be really tough," says Bob Goldin, vice chairman at researcher Technomic. "Pizza Hut is just kind of in the middle.

What 75 top HR and IT executives at midsize to



The middle is a tough place to be."

At a Pizza Hut in Lantana, Texas, one of the restaurants where the rebranding is on trial, the interior has a modern look: pendant-style industrial lights and exposed rock on the walls. Rather than sitting down and waiting to place their order, diners can pick what they want at the counter and watch their food being assembled. New ovens can cook a pizza at 575F in just three minutes. The regular cook time at lower temperatures, used during lessbusy hours, is six and a half minutes. "Our goal is to have restaurants that are easy to operate, accessible, and inviting," says David Gibbs, chief executive officer of the chain. "The new concept is designed for speed."

An additional 1,000 of the speedy ovens will be rolled out nationwide this year. The eatery in Lantana, says General Manager Terri Smith, is drawing crowds at lunchtime, when 90 percent of customers are ordering a new discounted \$5 lunch special: a 9-inch three-topping pizza and a drink. The extra speed makes a difference "when people have 30-minute lunch breaks," she says. Diners like the open kitchen, which lets them watch the

cooks take the dough out of a cooler, top it, bake it, and slice it. "They can see it from start to finish," Smith says.

Still, some of Pizza Hut's rivals are ahead of that curve. They've also been more innovative with ingredients. **Pie Five Pizza** promises its dough and marinara sauce are made fresh in restaurants each day; Blaze has a vegan cheese option and already cooks its pies in three minutes. Allnatural bacon and whole-wheat crusts are on the menu at **Pieology Pizzeria**, where sales more than doubled last year, Technomic says.

Pizza Hut has seen plenty of competitors rise and fall since its founding in 1958, when two brothers borrowed \$600 from their mother to open a pizzeria in Wichita. By 1971 it was the world's No. 1 pizza chain; it still is, but Domino's is closing the gap in the U.S. That rival's sales reached \$4.1 billion in 2014, more than half coming from digital orders, according to Technomic, while Pizza Hut's U.S. sales declined 3.5 percent, to \$5.5 billion.

"They've struggled. You can see it in the numbers," says Jack Russo, an analyst at Edward Jones. "Domino's has done a pretty good job." Meanwhile,

Companies/Industries

fast-casual rivals have an easier time charging more for their fare. Customers might be willing to loosen their purse strings occasionally—but not at Pizza Hut, he says. "I think they're going to do it more at a Panera Bread."

—Leslie Patton

The bottom line To woo diners, Pizza Hut is shaking up its ordering process and installing ovens that cook pies in just three minutes.

Pharmaceuticals

A New Prescription for Asia's Top Drugmaker

- ► Takeda targets drug categories with global appeal
- ► Most "new molecules discovered today are not by Big Pharma"

For much of its history, **Takeda Pharmaceutical** was a Japanese success story, becoming Asia's largest drug company and a global force on the strength of medicines such as Actos, once the world's No.1 diabetes medicine. No longer.

Actos lost patent protection in 2012, as have other Takeda stalwarts over the past decade, and the company's 5,000 scientists have produced few winners to take their place. The drugmaker's earnings hit a 15-year low in the fiscal year ended March 2014. And while Takeda once counted on strong demand for its branded drugs in its home market, that's changing as Japan's government embraces cheaper generics because of budget constraints. Much of the action in pharmaceuticals is also shifting from mature economies such as Japan toward emerging markets, where drug sales are growing much faster.

With about 1.78 trillion yen (\$15 billion) in annual revenue, Takeda ranks 18th among the 20 largest pharma companies worldwide. "Ten years ago you could be a leading global company by just being big in Japan, because the domestic market was so big, but today it's impossible," says Christophe Weber, the Frenchman who last year became Takeda's first foreign chief executive officer.

Weber, a 20-year veteran of **GlaxoSmithKline**, joined Takeda in

Companies/Industries



■ 2014 as chief operating officer before taking the top job last April. In recent months, he's filled key executive positions with external hires from international rivals. To revive research and development, he hired an American, Andy Plump, from French drugmaker Sanofi to be chief medical and scientific officer. To mentor local talent, Weber has begun hosting leadership programs. He also holds regular conference calls with his 300 top managers, giving them direct access to the CEO, a practice not common in Japan.

In November, Takeda announced a joint venture with Israel-based Teva Pharmaceutical Industries, the world's biggest generic-drug manufacturer, to pool resources to boost sales of generics in Japan. And on Weber's watch, Takeda ended several years of litigation by agreeing to pay more than \$2 billion to settle thousands of lawsuits in the U.S. that claimed the drugmaker had hidden Actos's cancer risks. (The company denies it poses any risk.) It also sold a respiratory business to AstraZeneca for \$575 million in December, so it could focus on drugs for cancer and gastrointestinal diseases.

While Takeda has introduced six products in the past two years, it has no significant late-stage experimental drugs in its pipeline aside from a dengue fever vaccine expected to reach the final rounds of human trials this year. "Andy Plump has a huge job ahead," says Credit Suisse Group analyst Fumiyoshi Sakai. "Clearly late-stage pipeline doesn't come cheap." The company may have to wait more than five years before seeing results from its partnerships, he says.

Capturing innovation from outside companies' own labs is the big trend in pharma right now, and Weber acknowledges the need for Takeda to look outward. "The majority of new molecules discovered today are not by Big Pharma," he says. "So we need to be very humble in a way and say, 'Yes, we will have internal capability, but we need to think external as well."

In December the drugmaker began a collaboration with Shinya Yamanaka, the Japanese researcher who won a 2012 Nobel prize for his research on stem cells. Under the 10-year, \$170 million pact, Takeda and the scientist's research center will study the use of cell technologies to treat conditions such as diabetes and cancer. Takeda also announced a partnership with Chicago-based Cour Pharmaceuticals, which along with Northwestern University has researched treatments for celiac disease, an immune reaction to eating gluten. Plump says a number of other tie-ups on new medicines will be announced in the next six months.

He also says he doesn't feel pressured to fill Takeda's pipeline immediately, because some of its new drugs, such as Entyvio for ulcerative colitis, should give the company a lift for "at least five years, assuming nothing awful happens." Says Plump: "Despite the fact that it's existed for more than two centuries and has been doing R&D for 100 years, it's a newborn company."

—Natasha Khan

The bottom line Drugmaker Takeda in fiscal 2014 saw its worst earnings in 15 years and is now bringing in foreign managers to help craft its future.

Appliances

Haier Has Higher Ambitions

- Buying GE's appliance unit, it gains a prominent U.S. brand
- "Haier has always had this global dream, and this completes it"

When **Haier Group** set its sights on entering the U.S. market in 1999, it took a year before the Chinese appliance maker's executives could get a meeting with **Walmart** to show off its air conditioners. Haier at the time made one of every three refrigerators sold in China, but that meant little to U.S. consumers

wary of the brand's quality and more comfortable with homegrown labels, according to a 2003 book, *The Haier Way*. On Jan. 15, Haier figured out a way around such perceptions: It agreed to pay \$5.4 billion to acquire **General Electric**'s appliance unit, the second-largest U.S. manufacturer of major appliances, according to researcher Euromonitor International. "This is the most significant move in Haier's history," says Liao Xinyu, a

history," says Liao Xinyu, a Shanghai-based analyst at UBS. "Haier has always had this global dream, and this completes it."

How badly did the Chinese buyer want the trusted U.S. brand? Haier's offer is 60 percent more than the \$3.3 billion that Sweden's Electrolux had agreed to pay for the unit last year. GE scrubbed the sale to Electrolux in December because of regulatory worries that the combined companies would have too high a market share in cooking appliances. The deal between Haier and GE Appliances is also subject to approvals in China and the U.S., but the Chinese company expects it to close in mid-2016, since the two businesses "are complementary and have minimal business overlap in terms of product range and geographic scope," a Haier spokesman said in a statement.

In its first forays into the U.S., Haier thought small: turning out low-priced niche appliances like mini-fridges for college dorms and small wine cellars for city dwellers. But Haier Chairman Zhang Ruimin always had a bigger goal of establishing a U.S. brand that wasn't dependent on low prices. So Haier in 2000 became the first Chinese company to build a manufacturing facility in the U.S., in South Carolina. The company also rolled out innovations such as remote monitoring of its appliances' functions via the Internet and customizable appliances, says Torsten Stocker, a former partner at consultant A.T. Kearney's consumer practice.

"It's underappreciated in the U.S. how advanced Haier is in product and manufacturing quality and the extent to which they've integrated products with the Internet," says Stocker, now chief operating officer at electronics distributor Thakral's lifestyle division.

Still, Haier's U.S. market share has barely improved, from 0.7 percent in

2006 to 1.1 percent last year, according to Euromonitor—even though worldwide sales at its appliance divisions in 2014 were about triple those of GE Appliances. This low penetration after 15 years is a major factor behind Haier's bid, says Feng Zhang, an appliance analyst at Euromonitor. "Haier has been trying to establish a foothold in the U.S., but its presence is still not strong," he says. "GE already has the brand name, loyal customer base, and distribution network in the U.S."

The buyout comes amid intense consolidation in the global appliance business. In recent years, **Whirlpool** acquired Italy's Indesit and a majority stake in China's **Hefei Rongshida Sanyo Electric**, while Spain's **CNA Group** bought that nation's insolvent Fagor Electrodomesticos. Haier bought New Zealand-based Fisher & Paykel Appliances Holdings in 2012, and it faced competition from Chinese

Amount set aside by

Bank of America, Wells

Fargo, Citigroup, and

JPMorgan Chase to

cover souring energy

loans as the price of oil

falls below \$30 a barrel.

rival **Midea Group** for GE Appliances. "The whole industry is synthesizing," says UBS's Liao. "This is a very important buy for Haier. If they didn't get it, there's not much left to buy."

As part of their deal, GE and Haier also signed a broader strategic partnership to explore cooperation in the industrial Internet, health care, and advanced manufacturing and will work together on affordable consumer health initiatives in China. That alliance is potentially more important than the appliance buyout itself, says Bill Fischer, a professor of innovation management at IMD business school.

Haier Chairman Zhang "has been speaking for the last several years of the strategic desirability of turning Haier into a 'platform company,' where it uses its talent and assets to collaborate with others," Fischer says, much the way app developers work with Apple's iPhone and iPad. "Haier is not interested in becoming the GE of China. They want to be the Apple of China." — Rachel Chang

The bottom line China's Haier is paying \$5.4 billion for GE Appliances—60 percent more than Electrolux's previous offer for the unit.

B Edited by James E. Ellis and Dimitra Kessenides Bloomberg.com

Briefs

By Ira Boudway

Bye-Bye Blackouts

Major League Baseball, Comcast, and DirecTV agreed to settle an antitrust lawsuits brought by fans over how games are televised. The class action, filed in 2012, challenged baseball's system of granting exclusive rights to regional cable networks in their home territories. The agreement would let fans watch their favorite teams, without regional blackouts, if they subscribe to pay-TV and buy a separate stream

\$2.5b



subscribe to pay-TV and buy a separate streaming service from MLB. The league will offer a package allowing fans to buy

streamed games for a single team for \$84.99 next season. • Greenlight Capital, the hedge fund run by David Einhorn, made an investment in Macy's in the fourth quarter of last year, a letter sent to investors in January reveals. In

the letter, Greenlight argues that the struggling retailer could be a takeover target because of its valuable real estate holdings. Adidas announced that Kasper Rorsted, head of Dial soap maker Henkel, will succeed Herbert Hainer as chief executive officer in October. Adidas shares soared after the announcement. Walmart plans to close 269 stores as it abandons its smaller Express outlets and streamline operations. As many as 16,000 jobs globally will be eliminated.

Sales at the retailer haven't been growing fast enough to offset billions of dollars in spending on higher wages and website changes.

• Audi will start building its first purely electric SUV in 2018 as part of parent Volkswagen's efforts to move away from its diesel-emissions scandal. The battery-powered vehicle will challenge Tesla's Model X, which went on sale in the U.S. last year.

"Managing and moving money should be a right for

a right for
all citizens
and not just a
privilege for the
affluent."
——Dan Schulman,

CEO of PayPal, speaking at the World Economic Forum in Davos, Switzerland

CEO Wisdom January 25 - January 31, 2016



Don't Take N

Groups on the left and right are fighting asset forfeiture

"This is something that would happen in another country"

Last April, Oklahoma State Senator Kyle Loveless saw a surprising news story. Spurred by advocacy groups from the left and right, the Democratic senate and Republican house in neighboring New Mexico had passed a bill reining in cops. Governor Susana Martinez, a Republican rising star and former prosecutor, had signed it into law. The issue that crossed partisan boundaries? Civil asset forfeiture, a long-standing practice giving law enforcement agencies the power to confiscate property tied to a crime, even if they haven't brought charges against the owners or won a conviction. "I had always thought this is gang money or drug money or something," says Loveless, a conservative Republican. "I started doing research online-I started seeing terrible stories of innocent people's stuff being taken."

In May, Loveless introduced a bill to reform the forfeiture system in Oklahoma. The latest version, filed on Jan. 20, would raise the burden on law enforcement to justify seizures. It would also create an oversight board to determine how forfeiture revenue is spent and would prevent the government from keeping most confiscated assets unless it has obtained a conviction. Cops and prosecutors have rushed to oppose the bill. "I think I bit the tail of Moby Dick," Loveless says.

Loveless has support from an unlikely coalition of national conservative, liberal, and libertarian nonprofit groups, including the American Civil Liberties Union and Americans for Tax Reform, the anti-tax advocacy group run by Grover Norquist. Similar bills succeeded last year in Michigan and Montana, and others have been

proposed in Ohio and Tennessee. "This is actually flipping the innocentuntil-proven-guilty ideal on its head," says Peter Bailon, general counsel of the nonprofit State Innovation Exchange, which promotes model legislation for state lawmakers around the country. Liberal groups emphasize the impact of forfeiture on communities of color, but conservatives focus more on the deprivation of property rights without due process. "Our activists, when they hear about it, they can't believe it," says Jason Pye, director of justice reform for FreedomWorks, a group backed by the billionaire brothers Charles and David Koch. "They think this is something that would happen in another country, a totalitarian regime."

A growing number of horror stories have helped spark scrutiny. In 2014 police at Cincinnati/Northern Kentucky International Airport seized a college student's \$11,000 life savings because his luggage allegedly smelled of pot. Last year, an aspiring music video producer taking an Amtrak train from

Crime Does Pay \$5b Deposits to the U.S. Justice and Treasury departments' forfeiture funds \$4b \$3b \$2b \$1b \$0 2001 2014

FISCAL YEARS, DATA: INSTITUTE FOR JUSTICE



Michigan to California lost \$16,000 in savings when a Drug Enforcement Administration agent who was questioning passengers confiscated his cash. "We don't have to prove that the person is guilty," the DEA agent in charge for Albuquerque, where the money was taken, later told the *Albuquerque Journal*. In 2008 officers in commando gear who showed up at a reception at the Contemporary Art Institute of Detroit, which didn't have a liquor license, confiscated 44 cars from guests. A federal judge ruled in 2012 that the raid violated the Fourth Amendment and reflected a "widespread practice" by the department.

Law enforcement groups say such examples give an important tool a bad rap. "There does not exist a widespread problem of us taking assets from innocent citizens and them

California's tellers and cashiers have feet, too, you know 27

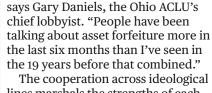


having to fight long battles to get their assets back," says Eric Dalgleish, a Tulsa deputy police chief battling Loveless's bill. Ceasing confiscations would make Oklahoma a magnet for crime, argues Tulsa County District Attorney Steve Kunzweiler. Drug traffickers often rely on "mules" who are rarely if ever charged or convicted of crimes, he says; preventing police

from seizing the cash they carry would only enable their bosses to do business from afar. "Just Google 'decapitated bodies hanging from bridge," Kunzweiler says. "That's a reality for the citizens of Mexico, and I do not want that to be a reality for any citizen in the United States of America."

Libertarians scoff at that line of argument. "The thumbscrew and the rack may also be useful tools for fighting crime, but we don't use them," says Roger Pilon, who directs the Cato Institute's Center for Constitutional

Studies and has been fighting what he calls "modern piracy" since the 1990s. It used to be a lonelier cause. A federal bill championed by Illinois Republican Henry Hyde, passed in 2000, imposed modest limits and notification requirements on federal forfeiture cases. The handful of groups fighting forfeiture back then had trouble getting more done. "It very much fell on deaf ears,"



The cooperation across ideological lines marshals the strengths of each group involved. The libertarian law firm Institute for Justice, which compares and grades each state's current laws, takes advice from the ACLU on where reforms are most likely to pass. The liberal State Innovation Exchange directs legislators looking for sample anti-forfeiture bills to model legislation developed by the Institute for Justice, which is similar to that offered by the conservative American Legislative Exchange Council. Experts from ideologically dissimilar organizations team up for awareness-raising panels: One held on Jan. 12 in New Hampshire was sponsored by the Charles Koch Institute, was moderated by Fox Business host John Stossel, and featured an ACLU attorney.

Last spring the liberal Center for American Progress and the conservative FreedomWorks co-hosted a lunch meeting on criminal justice reform for bloggers. It was "a trust-building exercise," says Rebecca Vallas, managing director of CAP's Poverty to Prosperity Program. Later, participants got together to socialize over drinks. Vallas told FreedomWorks' Pye about her work defending Social Security and income assistance programs. "We were both able to laugh," Vallas says, "and say, 'You know what? We should probably only talk about criminal justice and whiskey."

The oddly paired activists aren't winning everywhere. In California, which already restricts forfeiture more than most states, law enforcement lobbying quashed a bill that would have curbed collaboration with federal authorities on forfeitures. Sean Hoffman, the legislation director for the California District Attorneys Association, says his side prevailed by providing politicians with personalized estimates of the amount in forfeiture funds their local cops could lose. Still, he acknowledges that persuading legislators to side with







Politics/Policy

■ law enforcement is harder than it used to be. "We had members who had never previously worked together or voted on each other's bills teaming up" against forfeiture, Hoffman says. "I don't want to say they're wary of law enforcement, but we certainly have to answer for a lot of things that had not previously been issues." — Josh Eidelson

The bottom line A rare coalition of liberal and conservative groups is supporting bills against civil asset forfeiture around the country.

Pollution

Flint's Not the Only Problem in Michigan

- ► A refinery in Detroit wants to increase toxic emissions
- "We should be pushing for less pollution, not more"

"Government failed you," Michigan Governor Rick Snyder told his constituents in his annual State of the State address on Jan. 19. "You deserve better." The comments were addressed specifically to the residents of Flint, who've been drinking and bathing in lead-contaminated water for more than a year, after the city began using its polluted river as its main water source to save money. "We will be there with long-term solutions for as long as it takes to make this right," the governor went on. Republicans gave Snyder a standing ovation. Democrats in the statehouse were unimpressed.

Neither are some of the 7,000 residents living in and around the 48217 ZIP code in southwest Detroit, labeled by the Detroit Free Press as the state's most polluted. They're getting no help from the state in their efforts to stop a Marathon Petroleum refinery from increasing emissions of sulfur dioxide and seven other toxic chemicals. "Before Flint, it was us, the downriver communities, that were and are being polluted," says community organizer Theresa Landrum, who's lived her whole life a couple of blocks from the Marathon facility. "Now they want to give us more pollution."

Marathon, based in Findlay, Ohio,

wants to emit an additional 22 tons of sulfur dioxide per year from the facility, an industrial complex that can refine 132,000 barrels a day. The company says the increased emissions are the result of processes it's putting in place to meet new federal regulations requiring the reduction of sulfur in its gasoline from 30 parts per million to 10 ppm by next year.

The Michigan Department of Environmental Quality (DEQ) has said it believes Marathon's proposed emissions increase—a 9 percent jump over the 250 tons per year the company says it now emits—will still fall within federal and state limits. "We have chosen the most efficient, effective manner to getting it done and within regulatory restraints," says company spokesman Jamal Kheiry. State Air Quality Division Chief Lynn Fiedler is due to rule on Marathon's application after a public comment period ends on Jan. 29.

The 48217 ZIP code and its surrounding communities already sit under a gloomy pall of pollution that, as a whole, exceeds the Environmental Protection Agency's air quality standards. Each year, heavy industry in the area throws off 16,000 tons of sulfur dioxide, a chemical associated with respiratory problems. According to a study from Johns Hopkins University released in December, Detroit suffers the highest rate of childhood asthma among the country's 18 largest cities. "A little more pollution in a place as polluted as Detroit can cause an outsized effect," says Abdul El-Sayed, executive director of Detroit's Department of Health and Wellness Promotion. "We should be pushing for less pollution, not more."

Fiedler and the DEQ, whose director and spokesman both resigned in December over their roles in the Flint fiasco, didn't respond to requests for comment. Snyder spokesman David



Additional sulfur dioxide Marathon Oil wants to emit each year from its Detroit refinery Murray insists the governor isn't turning his back on the potential for another environmental crisis in Detroit. "The governor cares deeply about all communities," Murray wrote in an e-mail. "Much of his administration has been focused on restoring Detroit—the city and now the public schools."

Along with the Marathon emissions increase, the DEQ is also weighing a similar request from a nearby steel plant. The governor's office says the decisions are out of his hands. "If the governor felt strongly about this, he certainly could make that clear within his administration," El-Sayed says. "We're putting our foot down: No more pollution in the city of Detroit. We just can't take it anymore." —Steve Friess

The bottom line As it deals with the Flint crisis, Michigan considers requests from industrial plants to increase emissions in a poor area of Detroit.

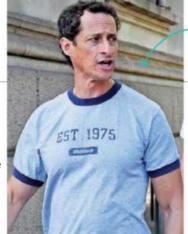
Campaign 2016

Anthony Weiner Won't Be Silenced

- A new film puts the disgraced politician back in the spotlight
- "I have no choice but to not let it debilitate me"

For a man who built a career on his ability to be combative on television and yell on the floor of the U.S. House of Representatives, Anthony Weiner now lives a surprisingly placid life. He consults for clients on federal regulations through his advisory firm, Woolf **Weiner Associates**. He's trying to get funding for a charity project to train low-income residents of Far Rockaway, in Queens, N.Y., to get into the restaurant business. The main focus of his life is his 4-year-old son, Jordan, whom he takes to school and ice skating. He's assumed responsibility for preparing dinner, unpacking and cooking the Blue Apron meals ordered by his wife, Hillary Clinton adviser Huma Abedin. Once a week, Weiner plays goaltender in a late-night hockey beer league. "I'm totally cool with this pace," he says. "I'm not doing much, and that's fine."

Yet even in this low-key mode, Weiner can't avoid attracting attention. On Jan. 24, *Weiner*, a documentary chronicling the demise of the former Democratic congressman's 2013 New York mayoral bid amid a sexting scandal—his



Weiner in New York in July 2015

second—will premiere at the Sundance Film Festival. Directed by Josh Kriegman, formerly Weiner's district chief of staff, the movie has been acquired by IFC and Showtime, which are planning a theatrical release in the spring and a TV

air date shortly before the presidential election. Clinton's campaign didn't respond to requests for comment.

The film was the product of a deal Weiner cut with Kriegman: unfettered access to the campaign, including Abedin, in exchange for footage the candidate could use in campaign ads. The timing of its release, almost three years after it was filmed, threatens to draw unflattering attention to his wife as the presidential nominating contest takes off. "Having a profile like Anthony's, it's a double-edged sword," says Risa Heller, who, like Weiner, worked as a staffer for U.S. Senator Charles Schumer of New York. "You have to be able to handle his past, but he also had an incredible run in Congress. He's a guy with boundless energy, big ideas, and a lot of smarts."

Weiner's latest brush with unwelcome publicity came in September, when he was dropped by MWW Group, a public-relations firm in New Jersey that had hired him to expand its New York presence. Weiner was pushed out in part because of his continuing activity on Twitter, the vehicle for his first sexting scandal in 2011. (That began after he posted a link to a photograph of his erect penis, concealed in a pair of boxer briefs, to his public feed rather than sending it via private direct message.)

After getting the MWW job, Weiner, who also appears as a political commentator on the New York local news channel NY1, posted tweets critical of former Governor George Pataki, a Republican. A Republican MWW partner close to Pataki objected, Weiner says. The *New York Post* ran a story about the discord he was causing his new employer. MWW Chief Executive Officer Michael Kempner declined to comment on the circumstances of Weiner's departure from the firm.

Asked why he doesn't just quit social media, Weiner cites his rights

as a citizen. "I have no choice but to not let it debilitate me," he says, speaking of the scandal. "It also doesn't make me care any less, or make me think that if I have something clever to say on Twitter I shouldn't say it, or if I have an idea I shouldn't

espouse it, or if I have a company that needs my help I shouldn't help, or if someone calls me for advice on how to run for office I shouldn't sit down with him. I don't know what my alternative is." —Henry Goldman and David Kocieniewski

The bottom line A documentary brings attention back to former Congressman Anthony Weiner, whose career ended in a 2013 sexting scandal.

Workplace

Cashiers and Tellers Stand Up for a Seat

- California justices consider the meaning of an obscure 1913 order
- "Nobody cared much about suitable seating before"

In California a 1913 regulatory order requires employers to provide a chair when "the nature of the work reasonably permits the use of seats." After a six-year legal battle, the state's highest court is considering whether that means Bank of America, CVS Health, **IPMorgan Chase**, and others must provide seats for tellers and cashiers. A loss for the companies would mean tens of millions of dollars in penalties, as well as the costs associated with changing their seating arrangements. "It would simply not work in the real world, as applied to real jobs," the U.S. Chamber of Commerce said in a friendof-the-court filing.

The seating suits are part of a legal phenomenon made possible by California's Private Attorneys General Act of 2004. PAGA gives employees the right to step into the shoes of the state labor commissioner and sue over alleged labor violations, including conditions for which there's no remedy

under existing law. Unique in the U.S., the state law was intended to guarantee workers' rights where the state lacked resources to enforce the law.

PAGA has since become a favorite tool of plaintiffs' lawyers, who've mined progressively more obscure corners of state law to find fresh infractions. State records show that claims have quadrupled, from 759 in 2005 to more than 3,000 in 2013. Workers have successfully used the law to sue over everything including unpaid meal breaks and pay stubs that failed to list an employer's legal address. Under PAGA, workers keep 25 percent of any penalties won and the rest goes into state coffers, not including fees for the lawyers, which can exceed the total paid to workers and the state.

Lawyers representing workers say it's been a cost-effective tool for improving working conditions in California. "Businesses were cheating workers out of a dollar here, a dollar there," says Michael Rubin, who represents **IPMorgan Chase tellers and CVS** cashiers. Those representing businesses say it's created more problems than it's solved by lowering the burden to sue over relatively minor issues. "Nobody cared much about suitable seating before there was a statute that incentivized plaintiff lawyers to bring these cases," says Tripper Ortman, a lawyer with Seyfarth Shaw in San Francisco.

At least three seating cases are pending before the federal court of appeals in San Francisco. At the request of the appeals court, California's supreme court heard arguments on Jan. 5 about how to define "the nature of the work," a concept left vague in the original 1913 order by the state's Industrial Welfare Commission. A lawyer for CVS argued that standing is critical to the drugstore chain's customer service. "What did we all do when court began?" attorney Tim Long asked the justices. "We rose. It's a sign of respect." Justice Carol Corrigan had a quick retort: "Yes, but you didn't stay standing all afternoon." —Edvard Pettersson, with Kartikay Mehrotra

The bottom line Under a 2004 law that lets employees sue over minor code infractions, banks and drugstores are at risk of millions in penalties.



HOW FAR WILL YOU TAKE IT

THE ALL-NEW RAV4 HYBRID

With spacious cargo capacity* and standard All-Wheel Drive with intelligence (AWD-i).



Let's Go Places

Prototype shown with options. Production model may vary. *Cargo and load capacity limited by weight and distribution. ©2015 Toyota Motor Sales, U.S.A., Inc.

Technology

January 25 - January 31, 2016

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The government demands more data and boosts local companies

"China has the muscle to get what it wants"

China hasn't been a welcoming place for many foreign technology companies. **Google, Facebook,** and **Twitter** are blocked. **Microsoft** is facing an antimonopoly investigation. **Qualcomm,** the leading maker of mobile chips, paid the government \$975 million to settle an antitrust suit last year and continues to have trouble collecting licensing fees from clients in the country. And things are getting worse.

On Jan. 1 a law took effect that requires telecommunications and Internet companies operating in China to provide law enforcement with technical assistance, including decryption of sensitive user data, in any probe meant "to avert and investigate terrorist activities." The version approved by the legislature's standing committee at the end of December dropped draft provisions that had drawn objections from the White House. Companies won't have to keep local user data at facilities inside China, and they won't need to give the Chinese government back doors into their systems. But U.S. and European trade groups still aren't

happy. The European Union Chamber of Commerce in China says the law's vague wording on when and how to help law enforcement decrypt data "leaves concern about how companies will be expected to carry this out."

The law builds on other counterterrorism, national security, and banking and insurance measures enacted last year that either ease regulation on or directly subsidize purchases of homegrown tech. China seeks to purge most outside technology from its banks, military, state-owned enterprises, and key government agencies by 2020, Bloomberg News has reported. The latest rules "continue the Chinese government's ongoing efforts to restrain or force out foreign technology companies," according to a Jan. 11 report by the Information Technology & Innovation Foundation, a Washington think tank whose honorary co-chairs include Republican Senator Orrin Hatch of Utah and Democratic Senator Chris Coons of Delaware.

The Chinese government has been good at protecting some digital turf at

home—**Baidu** owes much of its success to Google's absence, for example—but it's still had to work with a wide range of foreign hardware and software because other countries set the standards. China spent years during the mid-2000s promoting a homegrown standard for 3G wireless communication, which if adopted would have netted local companies regular royalties from adopters abroad. That effort failed, as did similar attempts to create made-in-China standards for radio-frequency-identification chips and streaming TV.

Now, though, companies such as **Huawei**, **ZTE**, and **Lenovo** are among the world's top makers of computing hardware and telecom networking equipment. President Xi Jinping's government can afford to phase out its use of foreign rivals and count on those who remain in the short term to keep cooperating. Given the limited economic growth in the U.S., Europe, and Japan, even China's slowdown and market turmoil don't significantly weaken Xi's hand in dealing with foreign tech companies, says James

Technology

■ McGregor, Greater China chairman of consulting firm APCO Worldwide in Shanghai. "China has the muscle to get what it wants," he says. "Companies in China are going to have to more and more play by China's rules."

Surveillance practices in the U.S., most notably those of the National Security Agency, have given China freer rein to tighten regulations under the auspices of national security, says Mark Natkin, managing director of Marbridge Consulting in Beijing. In a Dec. 16 speech at a tech conference in the eastern city of Wuzhen, Xi denounced what he called cybersecurity "double standards." Without mentioning the U.S., he said, "We cannot just have the security of one or some countries while leaving the rest insecure."

Shen Dingli, vice dean of the Institute of International Affairs at Fudan University in Shanghai, says the U.S. was the first to tar foreign companies in the name of national security. Huawei and ZTE have had difficulty selling to U.S. carriers since a 2012 congressional report named them as security risks.

There are limits to how far China can push foreign companies. Chinese consumers remain hungry for iPhones, for example. Perhaps more important, the country's chipmakers aren't ready to replace **Intel** microprocessors with homemade alternatives, says Li Xigen, a professor at City University of Hong Kong. When it comes to research into semiconductors and other computing building blocks, "there's some kind of bottleneck," Li says. "The gap is big."

For now, U.S. companies in particular are ramping up their partnerships with Chinese cousins to make sure

"We cannot just have the security of one or some countries while leaving the rest insecure." —President Xi Jinping there's a local interest in keeping them there. On Jan. 17, Qualcomm announced a joint venture with southern China's Guizhou province to make server chips. **Dell** is working with Chinese company **Kingsoft** to develop

cloud servers and has formed an artificial-intelligence lab with the Chinese Academy of Sciences. In recent months, **HP**, **Cisco**, and **IBM** have also announced plans to work more closely with local partners. That all suggests Xi's plan is working, Natkin says:

"China is moving full steam ahead."

Cooperation carries no guarantees. In the year since Chinese authorities raided Microsoft offices as part of an investigation into alleged price fixing, Microsoft has worked hard to keep the government happy. It's teamed up with state-owned China Electronics to customize Windows for Chinese users. It's given up on pushing its search engine, Bing, in China, instead making Beijing-based Baidu its Windows search default in the country. When Xi traveled to the U.S. in September to meet with President Obama, he first landed in Seattle to meet with Bill Gates and Chief Executive Officer Satya Nadella at Microsoft's headquarters.

None of that has resolved the company's China troubles. On Jan. 5, China's State Administration for Industry and Commerce announced a further probe of alleged Microsoft violations of antimonopoly law. SAIC said the U.S. company needs to "clarify major problems" that turned up from the earlier investigation, according to Xinhua, the state news agency. "We're serious about complying with China's laws and committed to addressing SAIC's questions and concerns," Microsoft said in a statement. Neither party detailed the concerns in question. —Bruce Einhorn, with Dina Bass

The bottom line Xi's latest national security rules, plus favorable policies for Chinese companies, are accelerating his push to shop locally by 2020.

Biotech

Better Coffee Through Bacterial Chemistry

- Startup Afineur ferments pricey java without the cat gut
- "We control which microbes we seed the foods with"

Kopi luwak, some of the world's most prized java, sells for more than \$600 a pound. The price is based on the Indonesian blend's unique marinating process: A small, furry, catlike creature called a palm civet devours coffee cherries, then poops out the undigested seeds—that is, coffee beans,



which ferment inside the animal's digestive tract. Camille Delebecque, a biologist, and Sophie Deterre, a flavor chemist, have spent much of the past year working to replicate the civet's flavor-altering powers while taking the mammal and its poop out of the equation.

Delebecque and Deterre co-founded startup **Afineur** in New York in late 2014. They're practicing a form of synthetic ecology, a highly controlled process of trial and error meant to outperform the families of microorganisms found in the civet's gut. Unlike the civet, "we control which microbes we seed the foods with," Delebecque says. "We use this fermentation to tailor the chemistry of these foods."

Afineur is infusing two varieties of beans—one Colombian, one Tanzanian—with bacteria and fungi chosen from a library of about 700 species not typically found in the world's handful of naturally fermented coffees. The company steeps hundreds of pounds of unroasted beans in metal fermenters for one or two days with what Delebecque would only call a "supersmall amount" of its microbial cocktail, which eats away at the beans' surface and changes their flavor. Roasting the beans burns off any

Afineur's fermentation process resembles the one that takes place inside the civet's gut

a pound; Afineur's lab-cultured beans cost

lingering microorganisms.

The co-founders say they've identified species that perform specific functions you'd probably want done to your coffee beans. Some microbes eat chemicals that can make the beans taste bitter or astringent when roasted. Others chew away at sugar, protein, and even afficing for a kind of

and even caffeine, for a kind of biological decaffeination. The Tanzanian roast doesn't exactly match the taste of kopi luwak, but Delebecque says that's by design. Afineur's smooth, fruity roast has a relatively low acid content, making it potentially easier on the stomach. Producing the beans this way, instead of through civet farming, also means there's no caging or force-feeding involved.

Delebecque and Deterre, the company's only full-time employees, met in high school on the outskirts of Paris. Deterre went on to work as a flavor chemist at Grand Marnier, the U.S. Department of Agriculture, and Mars, the candy maker. She was Delebecque's first choice for a partner when he became passionate about experimenting with coffee as a caffeine-addled medical researcher at Harvard. "I take coffee very seriously," Deterre says.

"Like wine and cheese."

The duo raised \$60,000 in venture funding from startup accelerator IndieBio to get their company going. They say they made about \$100,000 in revenue in 2015 selling their beans at a handful of retail shops and on Kickstarter, where they charge \$29 for 5 ounces

or \$129 for 30 oz. That's cheaper than kopi luwak and not far from a month's worth of daily Starbucks lattes, but it's an order of magnitude more than you'd spend on most brew-your-own Starbucks beans. Former Starbucks technical director Dan Belliveau says Afineur's cost relegates it to a fairly small niche. "But if it's being sold, that's the free market," says Belliveau, now the chief executive officer of CF Global Holdings, a startup that makes a high-fiber flour from coffee byproducts. "Power to them."

Delebecque says he and Deterre are working on ways to ferment cereals. For now, they're rolling out a global subscription service for their beans (\$49 for 10 oz. of beans a month, or an undetermined discount for a year's supply) and negotiating to put Afineur's beans in **Whole Foods** stores and high-end restaurants in the

Technology

New York area. Delebecque says he's not concerned about the limits of the company's audience: "Consumers are looking for interesting flavors. Fermentation's unlocking a whole new element." — Peter Andrey Smith

The bottom line Afineur is fermenting coffee with combinations of bacteria and fungi to give the beans more rarefied flavors.

Ride Hailing

Facing a Price War, Uber Bets on Volume

- ► The U.S. operation cuts fares while promising imminent profit
- "I'm not even sure I want to drive anymore"

It's becoming a bit of a holiday tradition for **Uber**: ringing in the new year by lowering fares. Amid a price war with rival **Lyft**, the ride-hailing leader reduced its rates by 10 percent to 45 percent in 100 cities across North America. In Detroit, Uber drivers' permile rate is less than it takes to cover their gas and the depreciation of their cars, according to IRS figures. "It's depressing," says Bill Scroggins, an Uber driver in Indianapolis. "I'm not even sure I want to drive anymore. It feels like I'm doing it for free."

This is the third year in a row Uber has discounted fares in January. It calls the cuts seasonal but says they could last indefinitely. Last year rates never rose again in almost a third of cities; only in two did they return to precut prices. Uber has instituted temporary hourly wage guarantees to limit drivers' earnings declines. It's assured Scroggins and other outraged drivers they'll come out ahead by making more trips an hour thanks to increased demand.

That may be what Uber is telling itself, too. A few months ago, Chief Executive Officer Travis Kalanick told employees that North American operations would turn a profit in the second quarter of this year. The goal sounds less realistic in light of the price cuts. "Uber has to sacrifice profits for growth," says Evan Rawley, a professor at Columbia Business School.

"We care deeply about driver

On Jan. 15, Lyft said it would cut fares, too. "With recent price changes from the competition, we need to take action," Lyft wrote in an e-mail to drivers. The company also announced a \$1 billion round of funding on Jan. 4 to help keep its pink-mustachioed cars on the road. That brought Lyft's fundraising total to about \$2 billion—a ways from Uber's \$10 billion, but enough to dash Kalanick's hopes of knocking Lyft out of the market.

Uber is also churning through cash a

\$1.7

Amount Uber lost in the first three quarters of 2015, on revenue of \$1.2 billion having said it will spend billions to push its way into China, India, and Southeast Asia. In the first quarter of 2015, Uber lost \$385.1 million on \$287.3 million in revenue, according to leaked figures

published by the *Information*, a tech news site. And losses are growing: In the third quarter, Uber lost \$697 million on \$498 million in revenue, according to a person briefed on the numbers.

Over the first three quarters of 2015, Uber lost \$1.7 billion on \$1.2 billion in revenue. For perspective, during Amazon.com's worst-ever four quarters, in 2000, it lost \$1.4 billion on \$2.8 billion in revenue. CEO Jeff Bezos responded by firing more than 15 percent of his workforce.

As it tries to expand abroad, Uber is counting on North America as a moneymaker. Kalanick predicted the continent's imminent profitability last September, during a companywide gathering in Las Vegas. (Beyoncé also performed.) Globally, Uber tends to lose money per ride, but ridership is growing. Total trips increased about 40 percent from the second to the third quarter of 2015, says a person familiar with the data. On a November call with investors, acting Chief Financial Officer Gautam Gupta said the company is profitable in two of its biggest countries, though he wouldn't name them.

In North America, Uber has inched toward profit, even with lower fares, in large part by leaning harder on drivers.

"We're gonna get Apple to start building their damn computers and things in this country instead of in other countries."

Donald Trump, during a Jan. 18 speech at Liberty University. Apple CEO Tim Cook has said the U.S. lacks other countries' manufacturing expertise.

It takes as much as 30 percent of a driver's fares now, up from 20 percent two years ago. Since 2014 it's been charging riders an upfront Safe Rides fee, which goes directly to Uber. The fee started at \$1 per ride; it's up to \$2.50 in some cities. Uber has said it uses the charge to help fund things such as safety education and background checks.

If drivers win rights as employees or manage to form unions, Uber may have to change strategies. For now, a steady influx of contractors means the company can get away with added fees and rate cuts, says Simon Kwok, a Boston driver who runs a blog about Uber and Lyft. While veterans complain that rates used to be higher, he says, "the new guys just don't know." — Eric Newcomer and Ellen Huet

The bottom line Uber's third year of January rate cuts is complicating its efforts to eke out a profit in North America by June.

Hardware

A Pixie to Keep an Eye On Your Keys

- ➤ A bouquet of sensors connects the lowest-tech items to the Web
- "Consumers are being bombarded by connected devices"

Amir Bassan-Eskenazi is walking around an Indian restaurant in Los Altos, Calif., searching for his keys without ever looking up from his iPhone. On the screen, a directional indicator that looks like a compass point steers him toward a table in the middle of the room. When he holds up the phone, its camera view of the room includes a circle flashing over the keys' location. He still can't see them, so he waves his phone over the circled spot, and it starts chirping like a metal detector that's found a quarter on the beach.

Bassan-Eskenazi is conducting his search with **Pixie**, a locator tool he created that resembles a jumbo guitar pick and can be stuck or chained to frequently lost items such as keys, wallets, purses, iPads, or TV remotes. While that might not sound revolutionary, Pixie's locator chips and software make the device more precise than many rivals. The technology isn't impaired by walls or other obstacles, so if you're in the living room and point your phone at the ceiling, it can show that your wallet is in the bedroom upstairs.

The metal detector-style ping is similar to the proximity alerts of other stuff-finder tools, such as the successful Kickstarter project Tile. Like Tile, Pixie communicates with an iPhone via Bluetooth. Unlike Tile, it's sold in packs of four, which the app can name to keep each one identifiable. Together, three of the Pixies ping out signals to better triangulate the location of the one you can't find, at a range as far as 50 feet indoors and 200 feet outdoors. Outside that range, it'll remember the item's last location. "It's an extremely complex system," Bassan-Eskenazi says. "None of this was done before."

Pixie has presold about 10,000 of the four-device packs on its website; early backers paid \$35, but now buyers will pay \$70. (Tile costs

F COURTESY PIXIE: ILLUSTRATION BY 73

\$25.) Peter Middleton, an analyst with researcher Gartner, says Pixie's technology is more sophisticated than the rest of what's on the market, particularly its layer of mapping software that highlights an item's location in what looks like the phone's camera view.

Bassan-Eskenazi got the idea for Pixie in 2011, when he was selling his previous company, the video networking service BigBand Networks, for \$172 million to telecommunicationsequipment maker Arris Group. As he was leaving for a meeting with his attorney to review the terms of the deal, he couldn't find his daughter's cat, Ouzo, and had to choose between being late or finding the pet. "The cat is at the top of our family food chain," he says. He found Ouzo under a bed. (One of Pixie's first beta testers attached the device to her cats' collars.)

Middleton says Pixie's challenge will be staying ahead of copycats. It also lacks Tile's GPS tracker. Jitendra Waral, an analyst for Bloomberg Intelligence, says connected-device makers need to focus on selling to corporations or making components for other devices. "Consumers are being bombarded by connected devices and probably aren't ready," he says.

Pixie, which isn't yet profitable, has raised \$12 million in venture funding. Bassan-Eskenazi says he plans to expand the 25-employee company's focus beyond consumer sales, potentially embedding the locator tech directly into car keys, remote controls, and tablets. This month at the annual Consumer Electronics Show in Las Vegas, he set up shop at a booth sponsored by **Intel**, pitching the locator's applications to other device makers.

Back at the Indian restaurant, keys in hand, Bassan-Eskenazi says he'll soon announce an agreement to place Pixie in the stores of major retailers, which he won't name. "We want this to go into different hardware. It's a logical step," he says. Then, when the bill arrives, he begins rifling through his bag and pant pockets to cover his half. Should've brought a second Pixie: He'd misplaced his wallet. —Adam Satariano

The bottom line Pixie has presold 10,000 sets of its location-tracking Bluetooth devices and plans to diversify more quickly than its cheaper rivals.



Innovation

Touchvie

Form and function

Touchvie's app identifies actors, objects, and other details in movies and TV shows, from a shirt's brand to a beach's location, as you watch. It provides relevant info as things pop upwhere to buy the shirt, how to book the trip.

Innovator José Luis Flórez

Co-founder and chief executive officer of Touchvie, a 65-employee startup in Madrid

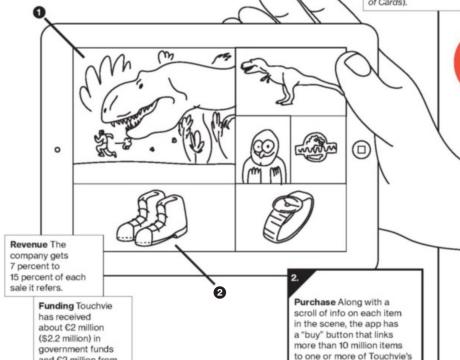
Setup For any movie or show that the artificial-intelligence software has indexed, the app recognizes a given scene using the microphone in the user's phone. A viewer can also type in the title.

Origin In 2014, Flórez founded Touchvie with three veterans of his previous data analytics startup, Neo Metrics Analytics, bought by consulting firm Accenture in 2012.

dozen retail partners.

including Alibaba.

Selection Touchvie. launched in November, has indexed about 1,000 movies (Star Wars, Jurassic World, Fifty Shades of Grev) and 10 TV shows (The Big Bang Theory, House of Cards).



Next Steps

and €2 million from

friends and family.

Santos González, a math professor who heads the advanced analytics program at the University of Oviedo in northern Spain, ranks Flórez among the world's foremost data scientists and says Touchvie is "advancing the future of watching movies and TV." Flórez says there'll be an English version of the Spanish-language app in the U.S. and Europe by April. He says Touchvie is indexing 12 to 15 movies a day and will have more than 6,000 cataloged by yearend. —Nick Leiber



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As oil sinks, turnaround experts come knocking 36
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We're going bankrupt!

Wait! Us too!
Our cable bill is like HUGE

States can't seek legal protection from their debts, but there's a move on to change that

Without the option, hard-pressed governments "have to cannibalize other stuff"

Puerto Rico is trapped in a financial crisis so deep that President Obama says the only way out for the territory is to make it eligible for a bankruptcy-like process to shed some of its debts. None of the 50 states is nearly as bad off as Puerto Rico. But some influential people are arguing that if a state does get into deep financial trouble, some kind of bankruptcy would be the best option—certainly better than a tax-payer bailout.

States, unlike cities and counties, currently can't declare bankruptcy. The case for allowing it is that a well-run proceeding apportions losses fairly and

fast. Lenders and bondholders absorb some of the pain, but so do government workers and retirees. Taxes go up and government services are cut back, but ideally not as severely as in an uncontrolled default. The result is a government that's streamlined, not gutted.

"Bankruptcy lets you get ahead of the problem," says David Skeel Jr., a professor at University of Pennsylvania Law School and a leading advocate of giving federal bankruptcy protection to states. Without that option, he says, "what inevitably happens when you're in deep financial distress is that you have to cannibalize other stuff. You cut police, schools, other services. You reinforce the downward spiral."

In another scenario, a state that goes broke and has no recourse to bank-ruptcy may end up seeking help from the federal government. "We want to cut off the politicians from assuming that at the end of their wild overspending they can just dump the responsibilities on other taxpayers," says former House Speaker Newt Gingrich.

Gingrich and Jeb Bush co-wrote an op-ed in the *Los Angeles Times* supporting state bankruptcy in 2011, the last time it was seriously debated. At the time, states were reeling

A state hasn't defaulted since Arkansas, in the throes of the Great Depression, in 1933

◀ from the aftereffects of the financial crisis. During a congressional hearing that year, Senator John Cornyn (R-Texas) raised the issue with then-Federal Reserve Chairman Ben Bernanke. (Bernanke responded that states "have the tools to deal with their fiscal problems and debt.")

Public employee unions and their supporters trashed the bankruptcy option last time around, afraid that it would give states an easy way to slash their pension obligations. State governments said they didn't want to be eligible for bankruptcy, fearing that the very possibility would spook investors in municipal bonds and drive up their borrowing costs. And some analysts worried that it would reduce the pressure for budget action. "If you had this out, it would make it a little bit more difficult to persuade people that they need to raise taxes or cut programs," says Elizabeth McNichol, a senior fellow at the Center on Budget and Policy Priorities.

Treasury Secretary Jacob Lew is seeking to wall off federal relief for Puerto Rico from the explosive question of state bankruptcy. In a letter to House Speaker Paul Ryan on Jan. 15, he pointedly didn't ask Congress to make Puerto Rico eligible for protection under the federal bankruptcy code. Instead, he said Puerto Rico needs "an orderly process to restructure its debts," coupled with "strong, independent fiscal oversight." Something like that could be done through the federal law governing Puerto Rico and the other territories, sidestepping the bankruptcy code. Ryan has given lawmakers until March 31 to act.

There are some tricky constitutional issues with state bankruptcy. Juliet Moringiello, a professor at Widener University Commonwealth Law School in Pennsylvania, says it could violate the contracts clause, which prohibits states from interfering with contracts, and the 10th Amendment, which says states are sovereign. (Bankruptcy would put states under the authority of a federal

judge.) Penn's Skeel thinks these objections could be surmounted—for one thing, it would be voluntary for states. But he's not sure how current Supreme Court justices would rule.

Legalities aside, the strongest argument for state bankruptcy is that it clearly signals to bondholders that they could lose money if a state behaves badly. Knowing that, investors will demand higher yields from states with bad budget problems, thus encouraging the states to get their financial houses in order. With the notion of state bankruptcy in the air again, "municipal investors should no longer assume that state governments themselves will never have access to protection" from creditors in bankruptcy court, Matt Fabian, a partner in the research firm Municipal Market Analytics, wrote to clients in December.

The principle that states are responsible for their own debts goes back to the 1840s, when Congress refused to assume the debts of states that had overborrowed to finance a canal- and railroad-building craze. Chastened by the episode, many states passed balanced-budget amendments and took other steps to keep their debt under strict control. It was "a pivotal moment in the history of U.S. federalism," Jonathan Rodden, a political scientist at Stanford and the Hoover Institution, wrote in a 2012 paper.

The effects have lasted into the present. A state hasn't defaulted since Arkansas, in the throes of the Great Depression, in 1933. When states behave badly, their borrowing costs rise. The cost of protection against default by the financially troubled state of Illinois is now three times as high as that of California.

Market discipline may be weakening, however. The federal government relies on the states to carry out some programs, such as Medicaid. Investors and state governments could start to conclude that Washington has an implicit duty to come to their rescue if they get in trouble. If so, states would be tempted to overspend and bond investors to overlend. If Washington were on the hook for the states' problems, it would naturally want control over their finances—but under the Constitution, it can't have that.

Making bankruptcy a last-ditch

option, writes Stanford's Rodden, would reinforce the U.S. tradition of market discipline. "It is not too late," he wrote in a chapter for a 2014 book, *The Global Debt Crisis: Haunting U.S. and European Federalism.* "In fact, the timing might be quite good to clarify once and for all that states can and will default if they do not achieve fiscal sustainability." —*Peter Coy*

The bottom line As Puerto Rico seeks federal help with its finances, a debate resumes over what to do when states get in over their heads.

Energy

A Man No One in the Oil Patch Wants to Meet

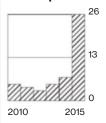


- Restructuring experts do a brisk business as producers falter
- "These are hard conversations, especially with a founder"

Jeff Huddleston, a turnaround specialist in Houston, says he's gotten used to being "the most hated guy" in the room at the energy companies that hire him. Now, in the midst of the ugliest oil market downturn in decades, he and his fellow badnews bearers have never been more needed. Or dreaded.

"We're like living symbols that something has gone really wrong," says Huddleston, a managing direc-

U.S. Energy Bankruptcies



tor at consultants **Conway MacKenzie**. While the broader U.S. economy has been adding jobs at a healthy rate, oil companies have let go of 250,000 workers globally over the past year. The energy

Restructuring experts like Huddleston are brought in by companies, and sometimes creditors, to help keep the lights on. Their toolbox includes drilling cutbacks, asset sales, and contract cancellations, as well as bankruptcy and layoffs. Huddleston can tell how a client feels about him by the workspace he's assigned. In 2014 one put him in a windowless supply closet, where he balanced his laptop on a small table next to the paper shredder. **Biggest Middle East**

Winning management's confidence is especially hard when a restructuring is forced by bankers or unhappy investors, says Seth Bullock, a managing director at Alvarez & Marsal in Houston, another turnaround firm.

There will likely be more companies dragged into the woodshed: Crude has lost more than 70 percent of its value in the past 18 months, sinking below \$27 a barrel on Ian. 20. At about \$30 a barrel, more than one-third of the 54 exploration and production companies examined by research firm Sanford C. Bernstein are at risk of bankruptcy. Many analysts say prices could fall even further over the first half of 2016.

Oil producers have more flexibility than many other companies that experience hard times. It's easier to sell a standalone oil field than to untangle a division with factory operations that span the country. Managing those sales will help keep the turnaround professionals busy.

A good bedside manner is vital. People who do the work "tend to have a reputation for sharp elbows," Bullock says. "Nothing could be further from the truth. The best restructuring professionals have phenomenal people skills." An important part of the job, he notes, is keeping top talent from leaving the company when it needs them.

"These are hard conversations, especially with a founder," says Becky Roof, a restructuring adviser at AlixPartners. She recalls numerous "animated" meetings with the wildcatting boss of an oil company

Investing How to Bet on Iran

With international sanctions lifted, one of the world's hardest-toenter stock markets will be more accessible, if not exactly open. -Ladane Nasseri, Samuel Potter, and Golnar Motevalli



stock exchanges:

Saudi 2 Tel Aviv

Stanbul

4 Qatar Abu Dhabi

6 Tehran

Iran's stock market is the sixth-largest in the Middle East, with a total value of

The 300 stocks in the benchmark Tedpix Index traded at

earnings at the end of 2015, compared with an average of 12.2 times for stocks in developing countries. After a 21 percent decline in 2014, last year the Tedpix Index fell a further

Still mostly prohibited U.S. citizens U.S. companies ✓ Europeans

tours over the past year to assess the economic climate and visit some large, publicly traded manufacturers



For international investors, there are two ways in:

O Directly

This requires a broker based in Tehran, as well as a foreign trading license and special investment code to buy and sell securities.

② Through local funds

Several companies had been preparing to offer investment funds in anticipation of sanctions being lifted. There's already an index-linked exchangetraded fund for foreigners, and another small fund started in December.

Sanctions remain on about

Dozens of investors

have taken organized

Trading in Tehran runs

from 9 a.m. to

12:30 p.m., Saturday

to Wednesday

husinesses and individuals, including some connected to listed companies

Is Iran the **Next Big** Thing?

Not likely. The remaining sanctions are a nightmare for compliance departments of large institutions. even if they're not U.S.-based. Investors will also worry about a "snapback" risk: If the nuclear deal goes sour, sanctions could return.



Markets/Finance

■ before she was able to persuade him to slash his U.S. drilling program by 90 percent. Then she and her team spent another month of long days talking the company through layoffs and spending cuts that reduced its budget by 40 percent. "We weren't threatening—we were just continually, 'Yes, but what if?'" says Roof. Without the painful steps she says she had them take, "they would've run out of cash by now." —David Wethe

The bottom line As oil prices touch 12-year lows, turnaround experts are helping companies sell off assets and cut their workforces.

Financial Services

AmEx Struggles to Reach Beyond the Rich

- ► The credit card giant finds it hard to profit from prepaid plastic
- ► "The margins are different from high-net-worth consumers"

In his 34 years at **American Express**, Chief Executive Officer Ken Chenault has helped reinvent the credit card company more than once. But his latest push into new frontiers is faltering.

The company is dismantling its enterprise growth division, which had been home to an effort to fend off Silicon Valley startups and draw in new customers, including lower-income and younger people who aren't well served by traditional

banks. Several top executives have left in recent

months, including Neal Sample, the unit's leader. The company plans to cut about 170 jobs in New York and Florida and is closing the division's office near Manhattan's Tribeca neighborhood.

AmEx has already canceled a product launch in Mexico, scaled back research efforts, and folded some initiatives into other parts of the company. The key product for extending AmEx's reach is a reloadable prepaid card that can serve as an alternative to a checking account. The company is standing by that business, says Leah Gerstner, an AmEx spokeswoman.

As of early 2015, however, prepaid cards weren't a profitable business for AmEx, according to people with knowledge of the matter.

"What is critical to the growth potential of American Express going forward is that they continue to do well with their core customer base," says Sanjay Sakhrani, an analyst at Keefe, Bruyette & Woods.

The enterprise growth division was created in 2010 after Chenault made one of the biggest acquisitions in the company's history, buying payments startup Revolution Money from AOL co-founder Steve Case for \$300 million. Chenault renamed it Serve and used the underlying technology for the prepaid cards.

The company poured millions of dollars into development, recruiting rising stars from Silicon Valley. Employees in the operation were free to dress casually. AmEx sponsored a 40-minute documentary, overseen by Academy Award-winning director Davis Guggenheim, that profiled

'If Serve had been successful, AmEx would have been out like a peacock bragging about it. The fact they kept so quiet for so long is in itself an indication these products never caught on."

—Jason Arnold, RBC Capital Markets

struggling families shunned by banks. Tyler Perry narrated.

For all that, payments research firm Mercator Advisory Group estimates that the company has climbed no higher than sixth place among prepaid card issuers. That has

made investment in future products tougher to justify as AmEx struggles to overcome the loss of its biggest retail partner, **Costco Wholesale**, and tries to end its steepest stock slump since the financial crisis.

"Within the enterprise growth business, there are some things that worked and some things that didn't," says Gerstner, who declined to comment on the unit's profitability. "We've scaled back our experimental work and are focusing on our prepaid and alternative payments business."

According to a 2013 survey by the Federal Deposit Insurance Corp., 20 percent of households used nonbank services such as check cashing stores and payday loans. Almost 8 percent had no bank account at all. Although that's a large potential customer base, "the margins are different from high-net-worth consumers," says John Thompson, senior vice president at the Center for Financial Services Innovation in Chicago, which does research on services for underbanked consumers. "These things are especially difficult in large companies where profit has to be very, very big for it to be considered successful."

AmEx was a relatively late entrant into reloadable debit cards. Margins are thinner than what AmEx generates on general-use cards, and new entrants must grow quickly to make the economics work–a challenge when established players such as **Green Dot** and **NetSpend** have cards alongside cash registers at legions of retailers. There's not much wiggle room to boost those margins: The U.S. government has been putting pressure on financial companies to shave the costs of products for the poor. Green Dot CEO Steve Streit told analysts last month that AmEx's advertising spree no longer keeps him up at night and that Green Dot cards still outsell AmEx at major retailers.

Cards from Serve allow consumers,

"The reality is, 4 billion human beings are going to have cheaper energy."

BlackRock Chief Executive Officer **Laurence Fink**, at the World Economic Forum in Davos, commenting on the crash in oil markets

aren't

Quoted

Bv Caroline Winter

including those with weak credit, to load cash and spend it in stores or online. Users also can make payments to each other, giving AmEx a piece of the burgeoning peer-to-peer money transfer business. The effort has helped introduce to the AmEx brand new types of customers, which can boost earnings for other products down the line.

Still, going down-market risks diluting AmEx's brand among America's affluent, says Jason Arnold, an analyst at RBC Capital Markets. Such concerns have been compounded by AmEx's refusal to break out the project's earnings and market share for investors. (AmEx was set to report fourth-quarter results on Jan. 21.) "If Serve had been successful, AmEx would have been out like a peacock bragging about it," says Arnold. "The fact they kept so quiet for so long is in itself an indication these products never caught on."

During Serve's early years, Chenault emphasized in public that AmEx viewed it as a startup that might take years to produce a return. But within the company, Serve and the broader enterprise growth unit were a source of excitement, seen as integral to future growth. At the start of 2015, Serve was meeting targets approved by Chenault and making progress on measures such as how often customers recommended it to friends, according to people familiar with the project.

AmEx isn't giving up on the prepaid business. In August the company announced a new cash-back rewards program for Serve, making it the first reloadable card to offer such benefits. It has also announced new partnerships, such as a co-branded account with tax preparer **Jackson Hewitt**.

"We are a company that understands service is a terrific mission and that we are a welcoming, inclusive brand," Chenault said at a financial technology conference just over a year ago. The hard part has been making inclusion profitable.

—Elizabeth Dexheimer

The bottom line The new kinds of customers Chenault has seen as important to AmEx's growth have proved difficult to reach.

Edited by Pat Regnier Bloomberg.com

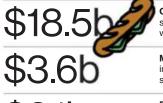


\$657m

Bid/Ask

Toronto's Brookfield Asset Management bets on U.S. malls.

Canada's No. 1 alternative asset manager made an unsolicited bid for New York-based Rouse Properties, the owner of 35 malls in 21 states. Brookfield, which already holds about one-third of Rouse, is bolstering its property holdings. Last year it spent \$2.5 billion to acquire U.S. apartment landlord Associated Estates Realty.



Crédit Agricole reorganizes. The French lender is exploring a sale of stakes in three dozen regional banks. The deal could be worth €17 billion, say people familiar with the matter.

Microchip Technology snaps up Atmel. Amid rapid consolidation in the semiconductor industry, Arizona-based Microchip successfully topped an offer from Dialog Semiconductor.

\$2.1b

Billionaire Anil Ambani seeks to shed his cement assets. Ambani's Reliance Infrastructure is selling to pare debt and refocus on its newest business, defense manufacturing.

\$1.2b

Norwest Venture Partners hits its fundraising goal for a new fund. The firm, which invested in Jet.com, Spotify, and Uber Technologies, will continue backing tech startups.

\$363m

Acorda Therapeutics buys a Finnish drugmaker. The New York-based pharma giant will acquire Biotie Therapies, maker of three clinical-stage Parkinson's drugs.

\$328m

Icon Infrastructure wins Toronto's Capstone Infrastructure.
The U.K. company gains a portfolio including gas, wind, hydro, and biomass power-generating facilities in Canada and elsewhere.



Jerry Seinfeld puts Porsches on the block. On March 11, the comedian will auction off three vintage cars. His 1955 Spyder is expected to bring as much as \$6 million.

Why Doesn't Silicon Valley Hire Black Coders?

Howard University fights to join the tech boom By Vauhini Vara Photographs by Christopher Gregory

In the fall of 2013 a young software engineer named Charles Pratt arrived on Howard University's campus in Washington. His employer, Google, had sent him there to cultivate future Silicon Valley programmers. It represented a warming of the Valley's attitude toward Howard, where more than 8 out of 10 students are black. The chair of the computer science department, Legand Burge, had spent almost a decade inviting tech companies to hire his graduates, but they'd mostly ignored him. Pratt began teaching computer science classes, helping to revamp the department's curriculum, and preparing students for Google's idiosyncratic application process. It was one of several initiatives meant to get the school to churn out large numbers of engineers. Two and a half years later, that hasn't happened. The slow progress reflects the knottiness of one of Silicon Valley's most persistent problems: It's too white.

Howard, founded in 1867, has long been one of the country's most eminent historically black colleges and universities. Thurgood Marshall went there, as did Toni Morrison; the writer Ta-Nehisi Coates, who attended Howard, called it the Mecca—the place where he realized the black world "was more than a photo negative of that of the people who believe they're white." Still, it's not among the elite science-oriented universities where tech companies have focused recruitment—places like Stanford, MIT, and Carnegie Mellon. Pratt arrived in Washington as traditional hiring practices were being scrutinized.

Pressured by employees and the press, companies began disclosing the demographics of their workforces. One figure stood out: African Americans, about 13 percent of the U.S. population, made up no more than 1 percent of technical employees at Google, Facebook, and other prominent Silicon Valley companies. This was at least partly because of the way companies recruited: From 2001 to 2009, more than 20 percent of all black computer science graduates attended an historically black school, according to federal statistics—yet the Valley wasn't looking for candidates at these institutions.

As the companies revealed their data, Burge says, recruiters began to get in touch. Early in 2014, Google's senior vice president for "people operations" blogged about Pratt's stint at Howard. That fall, Facebook's director of diversity, Maxine Williams, traveled to the school for a public chat with the university's president and a meeting with students. Dropbox made its first recruiting trip that fall; a year later, Pinterest joined the list.

Despite the apparent progress, Burge was circumspect





when I called in September 2015 to ask about the companies that had started approaching Howard: "'Started' could mean many things," he said. Howard was showing up in tech companies' news releases, but it wasn't yet clear how Burge's students would benefit. Facebook, Dropbox, and Pinterest hadn't yet hired any graduating seniors for a full-time position. In 2015, Google hired just one. This year, out of the 28 seniors in his department, Burge knows of only two who've lined up a Silicon Valley job: one at Google—its second Howard hire—and another at Pandora. "There's a big disconnect," Burge said.

Burge teaches martial arts in his spare time, which is fitting. He has the dry, reserved demeanor of a techie but runs the computer science department like a devoted coach. "When there are companies coming to recruit, he'll be like, 'Go get in

there! Go meet so-and-so!" says Lena Alston, who graduated in December. Some of his students have nicknamed him Uncle Burge. In 2005, a year before he became department chair, Google invited him to interview for an engineering position. He wasn't particularly interested in working there, but he saw a different opening: Maybe he'd meet some people who'd help his students. It paid off, eventually. Eight years later, the company created the Google in Residence program. Pratt had some teaching experience, from his college years at Carnegie Mellon, and he was disenchanted with his programming position at the time; plus, as a black engineer, he'd long been troubled by Silicon Valley's lack of diversity. He packed his bags.

Silicon Valley is rife with Stanford and MIT graduates who started coding during childhood, won programming competitions in their spare time, and spent their summers interning at startups. At Howard, few of Pratt's students fit that profile. They'd begun studying computer

science in college, and many had never visited the Bay Area. One senior, Sarah Jones, says she'd assumed for years that Silicon Valley was the name of a city. When she finally visited during college, it struck her as a startlingly homogeneous culture, made up of white and Asian people who "like *Star Wars* and stuff like Pokémon." When companies began to visit Howard, they'd boast about having on-site playground equipment and volleyball courts—not the kind of thing Jones or her friends got excited about. "Slides are not really appealing," she says. "There are not a lot of people of color in the Valley—and that, by itself, makes it kind of unwelcoming."

In 2013, when Pratt arrived, he got to know the students by staying on campus late into the evening, talking with them. When it came to Silicon Valley, "everyone had a war story," he says. "They either had a personal story or a story someone had told them that had completely turned them off." He was particularly

taken with a sophomore named Victor Foreman, a smart, scrappy Texan who was compelled by big challenges but didn't like following rules. Foreman had majored in computer science because its practitioners were constantly pushing the boundaries of human knowledge. "I wanted to be at the edge of some field," he says.

Pratt had come to realize that his students' previous courses had exposed them to computer science theory, but not to enough of the practical skills that matter to Silicon Valley. None had programmed before college. Foreman had started college in Texas, then dropped out and worked manual jobs. The labor had been painful, and there'd always been more workers than jobs, so after deciding to return to school, this time at Howard, he'd chosen computer science. Some other students impressed Pratt, too. Remington Holt had picked computer science after tagging along with a friend

to an information session and liking Burge. Alston and Hallie Lomax had taken computer science classes on a whim and fallen in love with the subject.

"Those four were some of my favorite students-and, in my opinion, all of them superbrilliant," Pratt says. He began assigning projects to them, and other freshmen and sophomores, that required writing code instead of just talking about it. "I was pretty lucky we got to have a Google professor, but he really let us know how behind we were," Foreman says. Pratt also noticed that many advanced classes at Howard and other black colleges weren't as rigorous or up-todate as they were at Carnegie Mellon or Stanford. By senior year, students risked falling behind their peers from other institutions. "I'd ask faculty members, 'Why are you teaching this course that way?" he recalls. "And they'd say, 'Well, I've been teaching the course for 25 years."

That year, Pratt urged Foreman, Alston, Lomax, and Holt to apply for paid summer internships at Google. He

coached them through the process, particularly the company's idiosyncratic interviews, which include tough programming challenges. Afterward, Lomax says, "I was sitting in a Starbucks, and someone called me and was like, 'Let me talk to you about your offer.' And I was like, 'Is this a joke?'" Holt, who'd tried for a Google internship the previous year and failed, also received an offer, which he attributes to Pratt's help. Alston got an internship. So did eight others.

Foreman did not. His classmates describe him as an excellent programmer—but unlike, say, Holt, a soft-spoken type known for getting along with everyone, Foreman is strong-willed, which sometimes gets him in trouble. "I just chalked it up to soft skills, I guess," he says, explaining that he and his interviewer had clashed. Pratt says he'd been "furious" to learn that Foreman had been passed over. Other companies said no, too. Foreman got fed up. He wasn't going to waste his time applying



for internships in Silicon Valley if they were going to keep closing the door. Burge and Pratt recognized in Foreman's experience a familiar predicament, in which people from underrepresented backgrounds worry about confirming negative stereotypes about their group, lose confidence, and get discouraged; the phenomenon, "stereotype threat," is getting more attention in the Valley, and companies have begun training employees to be aware of it. "I spent a decent amount of time trying to encourage Victor, who was also one of my better students, to keep going," Pratt says. "But it was obvious he felt a little rejected."

When Lomax, Alston, and Holt arrived at Google, all three experienced varying degrees of culture shock. "When I was at Google, one thing that I heard over and over again was, 'I learned

to code when I was 7.' And I was like, 'OK, I didn't,'" Lomax says. But the Valley's offbeat culture invigorated her. She'd always felt like a bit of an oddball at Howard; here, for the first time, the people she met reminded her of herself. Alston, who'd felt right at home at college, had a different experience. She could see Google wanted to foster a diverse culture, but, as the only African American on her team, she didn't feel she had much in common with her colleagues. "When I went out to lunch or something with my team, it was sort of like, 'Soooo, what are you guys talking about?" she says. "It could be something as simple as, like, what they watch on TV or what kind of books they like to read. And those are just not TV shows that I watch or books that I read."

"Back in the civil rights period, it used to be that lighter-skinned people were able to pass and be more acceptable, so they were able to get into organizations or get into companies," Burge says. "Now it's

a little bit different. It's about cultural fit. Do you laugh at the same jokes? Do you Rollerblade or whatever?" He says some of Howard's first interns at Google—before Pratt's arrival—did well during the summer but didn't get offers because, as a contact at the company told him, they hadn't been "Googley enough." (A spokeswoman said the company doesn't comment on hiring decisions. She noted that the head of people operations, Laszlo Bock, has written that Googleyness involves being fun-loving, humble, and conscientious.)

Even the Google in Residence program, Pratt says, faced "lots of hurdles." Among them, Google didn't give engineers incentives to teach at Howard–taking the gig was liable to hurt an engineer, pulling him out of the evaluation and promotion cycle. Pratt encouraged others to step up, but the interest was muted.

That fall, when Facebook's Williams came to campus with colleagues, the visit didn't go over well. In a meeting with

students, one Facebook employee brought up diversity so often that students say they felt uncomfortable—as if she wanted to talk only about the color of their skin and not programming. The event had been advertised as focused on diversity, but students had been eager to talk about jobs. A spokeswoman declined to make Williams or other recruiters available to be interviewed, because, she says, Facebook is "still building our relationship with Howard." Dropbox also made its recruiting trip to Howard that fall but didn't hire anyone full time.

Returning to campus for junior year, Foreman, Lomax, Alston, and Holt found that Burge's vision for his department was changing. He'd come to feel that Silicon Valley companies cared little about computer science theories. Recruiters wanted efficient, creative, experienced workers. So Burge

developed new courses on creating apps and launching startups, while also assigning more coding projects and making his students more aware of hackathons and other extracurricular opportunities. It was "a cultural transformation of our department," he says.

Burge adapted his approach for each student. Foreman had to work outside school, at one point as a valet, and his grades suffered. Burge encouraged him to take on paid coding projects for companies instead of wasting his time with nonprogramming jobs. Lomax, Alston, and Holt, meanwhile, remained on a more traditional path. The summer after junior year, Lomax took a paid internship at a software startup called Opower, and Alston and Holt returned to Google. At the end of that summer, Alston and Holt underwent what's known as the conversion process-one or more interviews to help Google decide whether to bring an intern on full time. Alston got an offer. She didn't want

to move to California—there was that cultural disconnect, and she'd have missed her family and friends back East—and was relieved to learn that the job, as a programmer, was in New York. She accepted. Holt, though, was told to sit tight; Google hadn't made up its mind about him.

Lomax had become enthralled by Silicon Valley and started to think she'd learn more on the job than in college. This fall, she dropped a bombshell on Burge: She was leaving school and heading west, though she hoped to finish her degree at some point. In November, Lomax arrived in San Francisco. She'd applied for dozens of jobs in September and October and kept a spreadsheet tracking her progress. But after a couple of weeks in town, she still had no formal offers. Google, Twitter, Reddit, and others had rejected her; some companies hadn't even responded to her application or to referrals from friends. Some promising leads remained—she was still



in the running with Facebook and LinkedIn-but all the interviewing, Lomax says, left her "kind of overwhelmed."

She suspected that her dropping out of college concerned some interviewers. "The moment you say, 'I'm not finishing this formal education,' things start to carry a little bit more weight," she says. "Like, if your algorithm isn't incredibly efficient in one of your interviews, they'll take that as a sign that you didn't get the full impact of that in school." Dropping out of Harvard to launch a startup is one thing; leaving Howard to get a traditional position, it seems, is another. In mid-November, Lomax accepted an internship at Pinterest. The company had previously rejected her for a full-time job, but she felt she could convince them of her chops if she could spend a couple of months there.

Holt, too, was leaving school early-but still getting his degree. He'd earned enough credits to graduate in December. Boeing had offered him a position, but it didn't excite him. Microsoft had rejected him. Pinterest had flown him out to San Francisco for interviews but ultimately offered him the same deal it gave Lomax: an internship rather than a full-time gig. Holt says he was told that the company had been impressed with his personality and skills but felt that because he was graduating early, he might not be prepared for full-time employment. Holt heard from Google, too–again, a rejection. He'd done well during his second internship, he says he was told, but not in his conversion interview. "I have no idea what went wrong," he texted me. A Google spokeswoman wouldn't comment on Holt's situation, but says interns most commonly don't get hired because of "technical ability." For some time, Holt had been considering graduate school, and now

he decided to focus on that, though before classes started, he would intern at Pinterest. Bre Cheung, a Pinterest recruiter, says the company gave Holt and Lomax internships partly because they're still pursuing degrees.

By then, Foreman was already working as a corporate consultant, but he came up with another scheme to get to Silicon Valley. Some time earlier, he'd told Burge about his idea for a music app called SoundCrowd. Burge encouraged him to launch it as part of a new startup development course he planned to co-teach in the fall with another engineering professor. He told Foreman that an investor named Michael Seibel was helping design and run the class. Seibel would also donate \$1,000 to each team of startup founders—to buy equipment, find customers, and so on. He was a partner at Y Combinator, a high-powered Valley firm that invests in and mentors promising startups. Foreman knew that joining

Y Combinator could make an entrepreneur's career. Maybe, he thought, he could persuade Seibel to invest in SoundCrowd. It could happen, Burge told him.

People tend to discuss Silicon Valley's diversity problem in binary terms. One camp says companies are biased against underrepresented minorities, or at least aren't trying hard enough to attract them. The other says there aren't enough people from these backgrounds who are qualified for positions—or at least who are good enough to beat those Stanford grads with all the programming trophies and internship experience and Mozart-like childhoods. The reality is, both are true.

Many Silicon Valley companies now have executives—in many cases, entire teams—responsible for making their ranks more

diverse; Google, Dropbox, Facebook, and Pinterest are among them. Several people working in these roles acknowledge that biases against people of coloroften unconscious—have kept the Valley from being more diverse; in response, companies have instituted training on such subtle discrimination. Companies also described facing another challenge, though.

When they started interviewing seniors, companies found-as Pratt did at Howard-that many were underprepared. They hadn't been exposed to programming before college and had gaps in their college classes. The companies were coming into the process too late. So many of them have created programs geared toward freshmen and sophomores. "Early indications show promise," says Roya Soleimani, a spokeswoman from Google, "but we know that meaningful change is going to take time."

Makinde Adeagbo, an engineering programs manager at Pinterest, notes

it'll be a couple of years before these interns graduate from college. Pinterest has visited the campus only once, but Cheung says the first year of recruiting at any campus is less about making job offers and more about making students aware of them as potential employers. When Justin Bethune, a diversity program manager at Dropbox, visited Howard, he met a lot of students who eventually took positions at well-known East Coast companies; for students raised in the South or East, moving to California is a big commitment. He realized it's important to "invest in and build trust and awareness among students" and "not just attend one job fair." A Dropbox spokeswoman says the company plans to return to Howard next month. After Facebook's initial awkwardness at Howard, employees went back last fall and held more technical and recruiting-oriented events, which impressed students. The company recently offered a full-time position to a Howard student.



Pratt points out that Howard, best known as a liberal arts institution, still isn't producing many computer science students—fewer than 30 graduating seniors, compared with an average of more than 100 for U.S. universities with computer science departments that grant Ph.D.s (as Howard's does)—and says it'll take years for Burge's program to start training students at the level of Silicon Valley's top feeder schools. At the same time, he says, that companies haven't snapped up Lomax, Holt, and Foreman—all great candidates, in his mind—amounts to "an abject failure." He wonders if companies were letting some of his former students slip through the cracks partly because of unconscious racial biases. "Someone like Hallie showing up in Silicon Valley expecting the reception that someone like Mark Zuckerberg would get—it doesn't surprise me that she

wasn't met with open arms," he says. "She doesn't fit the profile of what people think of when they think of engineers. Even though people think of Silicon Valley as a big meritocracy, I don't think that's how it works."

Google has expanded its Google in Residence program to other black universities and more than doubled the number of summer interns it hires from them. Still, Pratt says, the program "is probably impacting Google's image more than it's impacting Google as a place." Last year, he left the company to pursue an MBA at Stanford: he wants to become a venture capitalist and invest in diverse startup founders. His time at Howard made him passionate about making Silicon Valley less homogeneous, he says, but he lost faith that he could achieve that within Google.

In early November, I meet with Burge in a conference room in the engineering building. The walls are hung with posters displaying his students' research, and on a whiteboard someone has

scribbled a math problem. It's Veterans Day, a rare day off, and Burge shows up in an Adidas tracksuit. He talks about what he's doing to improve his students' job prospects. To address the lack of programming knowledge many had when they arrived at Howard, Burge has begun piloting a training program for incoming computer science freshmen. The students could complete the program online, over the summer, after which they'd be eligible for scholarships. And he's still revamping classes to be more project-based and less theoretical. The curriculum remains behind that of the top tech feeder schools, though, largely because the department simply has fewer resources. Burge is encouraging the university to let him hire more professors who could address the gaps. But whatever improvements he makes at Howard, he says, "the companies' cultures have to change, too."

Even some of Burge's closest partners have sometimes

disappointed him. For the startup course, he had hoped Seibel, the investor, would visit campus at least twice. But as class was to begin, Seibel said he was getting married and would be tied up with a long bachelor party in Europe, then the wedding. Instead of visiting Howard, he offered to meet with students and attend the final presentation of their startups over Skype. "He's a busy man," Burge says. He's careful not to criticize Seibel, but his tone sounds vexed. It reminds me of something Burge had once told me in a moment of frustration about Silicon Valley companies: "They want to do these things, but nobody is making the solid commitments."

In late November, Burge's startup class is winding down, and Foreman and his co-founders have had their first virtual

session with Seibel. Foreman still hopes Seibel will bring him into Y Combinator. "I don't think he'd take time out unless he was trying to find a company," he says. Seibel has offered a hint of encouragement: "He said if we build this and people use it, he'd be the first customer."

Soon after, I speak with Seibel. He has big ambitions for the class, which he hopes to expand to other campuses, and envisions a future in which historically black colleges are full of kids who know how to start companies. "I think there are two challengesand one challenge is how to diversify the workforce in the technology industry, and the other challenge is how to diversify the people who are starting companies," says Seibel, who is black. "At Y Combinator, we're focusing on the second one more than the first."

This seems to bode well for Foreman, and I ask Seibel what he remembers of his conversation with the SoundCrowd team. "To me,

they sounded exactly like smart, technical college kids," he says. "I was confident they had the ability to build whatever they wanted to build." But he stresses that the goal of the class isn't for him to find investments. Startup founders—including these—should focus on their customers, not on funding, he says. Seibel says he wasn't too involved in the class only partly because he was busy. He also wants professors to take ownership of the course.

The following day, Seibel attends the final presentations via Skype. He peppers the groups with questions: How many customers do they have? How much do they think they could charge for their product? At the end of the class, Burge asks Seibel if he has any final words. He congratulates the students on their projects, which he says have impressed him. "I know it took a lot of hard work," he says. Then he hangs up, leaving Burge and his students to figure out their next move. **3**





Robert
Mercer
is one
of the
wealthiest,
most
secretive,
influential,
and
reactionary
Republicans
in the
country

By Zachary Mider

The Money Behind Ted Cruz

In 2010, Arthur Robinson, a research chemist, decided to run for Congress in southern Oregon. Robinson, now 73, was not your average candidate. In a lab on a sheep ranch in the Siskiyou Mountains, he's spent the last couple of years collecting thousands of vials of human urine. Funded by private donors, he claims his work holds the key to extending the human life span and wresting control of medicine from what he calls the "medical-industrial-government complex." He has some unusual ideas. According to his monthly newsletter, nuclear radiation can be good for you and climate science is a hoax. In his spare time he buys unwanted pipe organs from churches and reassembles them on his property.

Robinson was new to politics and had little money of his own. The Democratic incumbent, Peter DeFazio, had held office for more than 20 years and easily outspent him. But six weeks before the election, a barrage of ads hit the airwaves, portraying DeFazio as a puppet of the Democratic leadership. Robinson lost, but the \$600,000 in ads helped him turn in the best performance by a Republican in the district in decades.

When the ads first appeared, Robinson says he had no idea who'd paid for them. Eventually the Washington operatives who bought them revealed they were working for Robert Mercer, a computer programmer and hedge fund manager in New York. Robinson knew Mercer slightly, as a donor to his research projects and a subscriber to his newsletter. Once, he'd even visited Mercer at the extravagant mansion on Long Island Sound where he lives with Diana, his wife of 49 years. He says they've never discussed politics.

Mercer is one of the most enigmatic and powerful forces in U.S. politics. Beginning around the time of Robinson's race, Mercer has put at least \$32 million behind conservative candidates for office, including \$11 million for a group supporting Texas Senator Ted Cruz's campaign for the Republican presidential nomination. So far, Mercer is the biggest single donor in the race. Working with his daughter Rebekah, he's spent tens of millions more to advance a conservative agenda, investing in think tanks such as the Heritage Foundation, the media outlet Breitbart.com, and Cambridge Analytica, a data company that builds psychological profiles of voters. Groups he funds have attacked the science of global warming,



published a book critical of Hillary Clinton, and bankrolled a documentary celebrating Ayn Rand.

Mercer, 69, has never spoken publicly about his political priorities and declined a request to be interviewed for this story. This account is based on interviews with more than two dozen people who have spent time with Mercer or worked on his political efforts, very few of whom were willing to speak on the record. He's tight-lipped even with his friends. That's made him an object of intense speculation. Some allies privately say they think he's pro-life and opposed to gay marriage, and others say the opposite. Republican operatives gossip about what little scraps of information they can glean-his theatrical Christmas galas, his habit of whistling to himself during business meetings. Other powerful conservatives court him: Freedom Partners, the network overseen by the brothers Charles and David Koch, sometimes caters events with cookies from Ruby et Violette, a bakery owned by Rebekah and her two sisters.

Mercer is the co-chief executive officer of one of the country's largest and most secretive hedge funds, Renaissance Technologies, but people who've spent time with him say he hasn't shown any interest in advancing its agenda in Washington. They say he disdains the establishment wing of the Republican Party, which he sees as too cozy with Big Business and Wall Street. Unlike many of his peers in New York financial circles, he doesn't shrink from the culture wars. He's supported a campaign for the death penalty in Nebraska and funded ads in New York critical of the so-called ground zero mosque. He and Rebekah have also directed money to an anti-abortion group and a Christian college, though people who know the father and daughter say they don't talk about religion.

A surprising amount of Mercer's attention and money finds its way to some of the most unusual fringes of the right wing. He's attended and funded an annual conference organized by Jane Orient, an Arizona physician and activist who recently suggested in an opinion article that elements in the U.S. government might have taken part in the

"Finally, the senator turns to him and says, 'Bob, you haven't said anything all day. Tell me what you think'"

San Bernardino massacre. Mercer money also found its way to an Idaho activist named Fred Kelly Grant, who travels the country encouraging legal challenges to environmental laws, which he says are part of a sinister plot by the United Nations to depopulate rural America.

"He's a very independent thinker," says Sean Fieler, a conservative donor in New Jersey who's worked with Mercer on advocating a return to the gold standard. "He's a guy with his own ideas, and very developed ideas, and I wouldn't want to speak on his behalf."

Four people who've discussed the matter with him say Mercer is preoccupied with the country's monetary and banking systems, which he sees as hopelessly compromised by government meddling. He was the main financial backer of the Jackson Hole Summit, a conference that took place in Wyoming last August to advocate for the gold standard, two of these people said. His name wasn't anywhere on the agenda. According to video shot at the event, he sat with Rebekah toward the back of the audience, an unobtrusive, silver-haired gentleman with dark brows, wire-rimmed glasses, a navy suit, and a red tie. At dinner that night, he sat at a table while other guests chattered around him, softly whistling to himself.

Mercer's rapid emergence as a political force was helped along by the U.S. Supreme Court, which held in *Citizens United v. FEC* in January 2010 that independent political spending is protected by the First Amendment. The ruling opened the door for unlimited election spending by individuals and corporations, most of which ended up being funneled through the groups that have become known as super PACs. Eight months after *Citizens United*, Mercer funded one of the country's first super PACs to support Robinson's bid in Oregon.

Critics warned that Citizens United would bring about a new era of corporate influence in politics, with companies and businesspeople buying elections to promote their financial interests. So far, that hasn't happened much; big corporations, for instance, still play a negligible role in presidential election spending. Instead, a small group of billionaires has flooded races with ideologically tinged contributions. The result has been a shift in power away from the political parties and toward the whims of the donors themselves. In part, this explains the large number and variety of candidates fielded by the Republicans in 2016.

Few have benefited as much from this new arrangement as Cruz. The Texas senator is loathed by establishment Republicans in Washington. But in July, a group of related super PACs known as Keep the Promise reported raising \$38 million to support Cruz's bid, almost all of it from three families no one would confuse with traditional Republican power brokers. In addition to Mercer, there's Toby Neugebauer, a founder of a Houston investment firm who now lives in Puerto Rico, and Farris Wilks, a mason, pastor, and father of 11 from rural Texas who became a billionaire a few years ago in the fracking business. Thanks to these three men and their families, Cruz's super PAC war chest was larger than that of any candidate except Jeb Bush, putting to rest any doubt that he'd have the financial firepower to mount a campaign.

According to Neugebauer, Cruz laid the groundwork for his run in February 2014, at a private meeting on the deck of the Palm Beach home of prominent donors Lee and Allie Hanley. Joining the Hanleys around a table in the Florida sun were Cruz and his wife, Heidi; his strategist, Jason Johnson; Neugebauer; and Robert and Rebekah Mercer. The topic was Cruz's chances in the election. A pair of researchers hired by Mercer and Hanley presented some intriguing findings. The country was ready for a Mr. Smith Goes to Washington figure-they used the phrase "Trumplike," Neugebauer says-meaning that an outsider candidate should have a good shot in 2016. The elder Mercer, as usual, sat silently in his suit and tie as the group spent seven hours discussing how a race might play out.

"Finally, the senator turns to him and says, 'Bob, you haven't said anything all day. Tell me what you think," Neugebauer recalls. Mercer spoke for just a few minutes. "He helped us frame up how we should be thinking about our risks and opportunities," Neugebauer says. "Bob is one of the greatest minds living."

A year later, Cruz announced his candidacy at a Christian university in Virginia, then flew to New York. That evening, he attended a private gathering at Rebekah Mercer's apartment in the Heritage at Trump Place, a skyscraper on the Upper West Side, where guests enjoyed sweeping views of the Hudson River. According to the Wall Street Journal, Rebekah and her husband have spent more than \$28 million buying six adjoining apartments on three floors of the tower. Robert Mercer didn't attend, but within three weeks he'd committed \$11 million to help put Cruz in the White House.

It wasn't until late in life that Mercer had the means to bankroll a presidential campaign. He's the son of a research scientist who held posts all over the country, mostly in the West. His father told him about a machine called a computer when he was 10 years old, sparking a lifelong fascination. In high school in New Mexico in the 1960s, Mercer filled a big notebook with code, despite having no computer to try it on.

Mercer described his "computational life" in a speech in Baltimore in 2014, where he'd come to accept a lifetime achievement award from the Association for Computational Linguistics. During a college job at an Air Force weapons lab in New Mexico, he says, he found his life's calling. "I loved everything about computers," he said. "I loved the solitude of the computer lab late at night. I loved the air-conditioned smell of the place. I loved the sound of the disks whirring and the printers clacking." His time at the lab also gave him an early taste of government bureaucracy. One day he figured out how to increase his computer's speed by 100 times. "Then a strange thing happened. Instead of running the old computations in 1/100 of the time, the powers that be at the lab ran computations that were 100 times bigger. I took this as an indication that one of the most important goals of government-financed research is not so much to get answers as it is to

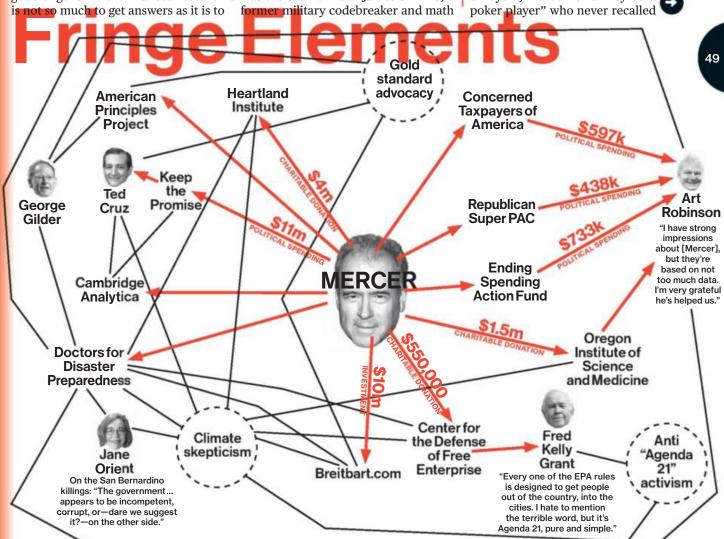
consume the computer budget, which has left me ever since with a jaundiced view of government-financed research."

After earning a Ph.D., Mercer joined IBM, where he was part of a team trying to teach computers to translate human language. Linguists tackling the problem at the time were convinced they needed to teach computers the intricacies of each language's grammar and syntax to make any progress. Mercer was part of a group of programmers who knew little about linguistics. Instead, they just dumped huge blocks of translated text into a computer and then taught it to guess at the likely relationships between words, using statistics. When the programmers presented their work at a conference in 1988, the linguists were horrified. But the IBM team's method worked, forming the basis of modern-day speech-recognition software and tools such as Google Translate.

In 1993 executives at Renaissance Technologies took notice of Mercer's work and offered jobs to him and several of his IBM colleagues. Situated on Long Island's North Shore, more than an hour from New York City, the hedge fund was the brainchild of James Simons, a former military codebreaker and math

professor who has an important theory named after him. Renaissance operates more like a university math department than a Wall Street trading shop. Dozens of math and physics Ph.D.s work on a 50-acre campus complete with a library, a gym, and tennis courts, using computers to crunch market data and spot patterns a human trader would overlook. When Mercer joined Renaissance, he was in his late 40s and two of his three daughters had already graduated from high school. He and a colleague from IBM, Peter Brown, rose quickly through the ranks, and when Simons retired in 2009, they became co-CEOs.

In his book *More Money Than God*, Sebastian Mallaby calls Renaissance "perhaps the most successful hedge fund ever." Its main fund, known as Medallion, earned 39 percent per year on average from 1989 to 2006. The firm long ago stopped offering outsiders the opportunity to invest in it; instead, its math whizzes have focused mostly on multiplying their own money. Mallaby describes Brown as an extrovert who sometimes zips around the office on a unicycle; Mercer is "an icy cold poker player" who never recalled



having a nightmare. Although the scale of Mercer's fortune has never been estimated, Simons's is pegged at about \$15.5 billion. Simons is also a major political donor-he was one of the largest supporters of Democratic causes in 2012.

In 2014 a Senate committee found that Renaissance had used a complicated series of transactions that lowered Medallion investors' personal tax bills by an estimated \$6.8 billion. Then-Senator Carl Levin, the committee's Democratic chairman, called the maneuvers "a series of fictions." Renaissance says the transactions were proper and not tax-motivated, and it's defending its conduct in an IRS proceeding. Because the Medallion fund is open only to Renaissance employees, it's likely that most of the tax savings went to the firm's top executives.

In his speech in Baltimore, Mercer recalled his victory over the experts, recounting a favorite line of his former boss at IBM: "Whenever I fire a linguist, the system gets better." It may be no surprise, then, that in politics, Mercer has sometimes ignored expert opinion and embraced long shots. In economic policy, climate science, and medical research, he's directed money to causes that are almost as far from the mainstream as it's possible to get.

In 2005, Robinson devoted an issue of his newsletter, Access to Energy, to an appeal for funds to buy a powerful piece of research equipment known as a mass spectrometer. He suggested that a revolution in medical treatment was at hand, if only he could get \$2 million to buy one.

A short while later, Rebekah Mercer called to introduce herself, and soon the Mercer Family Foundation sent its first check, for \$60,000. The Mercers have since sent Robinson's lab, which he calls the Oregon Institute of Science and Medicine, at least \$1.4 million more, according to the foundation's tax filings, allowing him to buy freezers to store his growing stockpile of urine.

On an overcast day in November, Robinson, who has white hair and pale eyes, comes to the door of his lab in a red flannel shirt, bluejeans, and socks. The spectrometer, the size of a couple of refrig erators, is whirring away inside, next to a huge antique pipe organ. Outside are two camouflage-painted shipping containers holding some of his 14,000 urine samples in military-grade freezers. The lab stands partway up a hillside overlooking a little valley. Sheep graze in the meadow.

Someday, Robinson says, his methods will revolutionize diagnostic medicine. He'll use the spectrometer to decode the chemical patterns in urine, the

It's hard to judge the credibility of his in the 1960s, he hasn't published peer-up as Churchill. reviewed research on diagnostic medicine in decades. "We've completed Mercer came as experiments here, which we could easily publish, but we want to wait until they are MacArthur perfect," he says.

In his monthly newsletter, Robinson advocates for a revival of nuclear power, warns that climate science is a "false religion" that will enslave mankind, and rails against public education-he homeschooled his six children on the ranch and now sells the curriculum. The common theme in his various projects is a deep distrust of government and a sense that broad segments of the American public are deluded. Mainstream science research, he says, is corrupted by its dependence on the whims of bureaucrats. Even the private health-care industry is part of the "medical monopoly" that stands in the way of progress.

How much of this does Mercer endorse? Robinson says he can't be sure. "I have strong impressions about him, but they're based on not too much data. I'm very grateful he's helped us." A typical interaction with Mercer, Robinson says, came a few months back, after he wrote in Access to Energy about the closure of a nuclear power plant in California. Robinson calculated that the power from the shuttered reactors could have desalinated enough seawater for all the state's nonfarm water needs.

An e-mail from Mercer showed up in Robinson's in-box. "He says, you know, 'I was thinking about that for New Mexico once, but I noticed that lifting the water to where it was needed from the ocean took a lot more energy than desalinating it. You left that out." Why had Mercer been studying desalination in New Mexico? "I have no idea," Robinson says.

Not long before his first run for office, Robinson paid a visit to Mercer at his home in Head of the Harbor, a short drive from Renaissance's campus in East Setauket. Mercer has dubbed his house the Owl's Nest. Owls seem to be **something** of a familiar for Mercer. He's commissioned a succession of vachts, all called Sea Owl, the latest of which stretches to 203 feet, with a piratethemed playroom for the grandkids and a chandelier of Venetian glass. At least one Sea Owl was fitted with a medical center and video links, so a stroke at sea, for instance, could be diagnosed and treated remotely by a former White

red flags that warn of disease before it At the World War IIstrikes. The human life span will stretch. themed Christmas claims; although he earned a Ph.D. from party, Cruz dressed the University of California at San Diego

House physician ashore. Through Centre Firearms, a gun dealership he owns with a group of investors, he recently acquired one of the country's largest collections of machine guns and historical firearms, including a weapon Arnold Schwarzenegger wielded in The Terminator.

At the Owl's Nest, visitors pass through pillars crowned by a pair of owl statues, their wings outstretched as if taking flight. People who've been inside describe a pistol range, a series of secret passages, and an octagonal tower holding a twostory library.

When Robinson visited, Mercer led him to the basement, where he keeps his model train; it cost about \$2.7 million, according to a lawsuit brought by Mercer against its designer, and depicts a swath of the Hudson Valley. A visitor can sit in a mock-up of a steam locomotive's cab to control the train. The windshield shows the view from a video camera on the tiny engine on the track below.

Robinson saw Mercer again last August, at a DoubleTree airport hotel outside Los Angeles. A group called Doctors for Disaster Preparedness, of which Robinson is a longtime member, was holding its 33rd annual meeting. Founded to promote civil defense during the Cold War, it's transformed over the years into a forum on many of the same fringe-science topics that Robinson covers in his newsletter. It's been run for decades by Robinson's friend Orient, the Arizona physician. Attacks on mainstream climate science are a staple, but the range of material is broad. One recent presentation spun a theory about links between John F. Kennedy's assassination and the deaths of his brother and son.

At the DoubleTree, one speaker warned that the aim of Obamacare was to bring about a collapse of the U.S. health-care system; she urged the audience to stockpile medications and find doctors who would work for cash. Another speaker spent almost an hour arguing that HIV does not cause AIDS; rather, he said, the link was invented by government scientists who wanted to cover up other health risks of "the lifestyle of homosexual men."

In an interview, Orient says she knows

little about Mercer other than that he's attended several of the conferences and has been a "generous" donor to them. In addition to arranging the events, Orient heads a separate group that opposes government involvement in health care, and she writes frequently in the far-right media. In December she posted an article about the San Bernardino killings, suggesting that the government failed to stop the attacks because it's "on the other side."

At the DoubleTree, a surprising number of strands from Mercer's interests intersected. Breitbart.com, the populist website he funds, dispatched a reporter to cover the meeting. The Heartland Institute, a climate-skeptic think tank to which he's given more than \$4 million, sent its science director to present his plan to abolish the Environmental Protection Agency. Another speaker warned of the dangers of Agenda 21, the UN program that's a frequent target of a Mercer-funded activist. George Gilder, a techno-evangelist and bitcoin advocate who recently wrote a monograph for the Mercer-funded goldstandard project, was on hand. And of course there was Robinson, who shared a lunch table with Robert and Rebekah Mercer. As usual, he says, Robert Mercer didn't have much to say.

A month after the California conference, the Mercer's headed to Jackson Hole. Every summer top officials at the Federal Reserve gather in the Wyoming resort community with many of the world's top economists to discuss monetary policy. But the Mercers went instead to the Jackson Hole Summit, a "counter-conference" they funded through a nonprofit group called the American Principles Project. The summit's aim was to question the very purpose of the Fed, calling for an end to government involvement in the money supply and a return to the gold standard. Steve Lonegan, an APP activist from New Jersey, opened the event by waving a dollar bill in the air. "Today, my friends, this little piece of paper in our pocket is manipulated, its value determined, and undermined routinely, by a bunch of unelected, unaccountable bureaucrats who are meeting right now a few miles away," he said. "America needs to wake up to this threat!"

The U.S. turned away from the gold standard during the Great Depression and dropped its last links in 1971. It's difficult to find a mainstream economist who advocates for it; a 2012 survey of economists at top U.S. universities failed to turn up a single supporter. Yet it's a particular interest of Mercer's, say several people who've discussed the matter with him.

Mercer is also a passionate critic of

a central element of the modern financial system known as fractional reserve banking, these people said. Essentially, it's the practice of banks lending out their depositors' money to others. Banks have been doing this for hundreds of years, but a few out-of-the-mainstream economists consider it a form of fraud-akin to conjuring currency out of thin air. According to one associate, a thinker said to be influential with Mercer is Murray Rothbard, the late economist who called the modern banking system "a shell game, a Ponzi scheme." It's unclear how Mercer's views on the banking system square with his hedge fund activities; it emerged in the Senate tax investigation that Renaissance, to boost returns, sometimes sought leverage of as much as 20 times the value of its assets from giant banks such as Barclays.

In early 2015, Lonegan arranged a meeting between the Fed's conservative critics and Chair Janet Yellen. Among those to take part was John Allison, a director and former president of the Cato Institute, a prominent libertarian think tank, Allison came away embarrassed by Lonegan's presentation, which he privately characterized as amateurish, says a person familiar with his views. (Lonegan says he was unaware of Allison's criticism and that even a top Fed official praised the presentation.) Cato announced it was backing out of the upcoming Jackson Hole event. Rebekah Mercer wrote to Cato, urging it to reconsider, according to two people with knowledge of the correspondence. Her request was likely to carry weight, as the Mercers are also Cato donors. The think tank reversed course and sent a speaker to Jackson Hole.

Allison won't discuss his views of the Yellen meeting but acknowledges he had a "debate" over strategy with Lonegan's group. "It was about being sure, when challenging the Fed, that we're seen as intellectually credible," he says. "I have really high regard for Bob and Rebekah. They're really fine people. Anytime you're trying to accomplish a difficult task—which, reining in the Fed, it doesn't get much more difficult than that—you're going to have disputes about technique."

As for the Jackson Hole conference, the closest the gold-standard activists got to Fed officials was at the airport, where Lonegan passed out gold-coin chocolates to passers-by.

Breitbart.com, which devoted at least six stories to the summit, has proved to be one of Mercer's better political wagers. He invested \$10 million in the media outlet when it was struggling in 2011, according to a person with knowledge of the

transaction. Since then, its audience has exploded. In December it announced its billionth page view of the year.

Other bets haven't had as much impact. Grant, the Idaho lawyer and activist, says he got more than \$100,000 from the Mercers in 2013 after meeting with them at Rebekah's apartment. For years, Grant has preached a little-known legal theory, known as coordination, that he uses to challenge environmental regulations. The plan was to turn his one-man crusade into a self-sustaining organization. But now Grant, 79, says the Mercer money is long since spent and he was never able to hire staff.

Mercer's bet on Cruz, however, is looking prescient. When Mercer plunked down his \$11 million last April, the polls put Cruz near the bottom of the Republican race. Now, capitalizing on a surge of interest in anti-establishment candidates, Cruz is near the top of the polls nationwide and leading in Iowa, which holds the country's first nominating contest on Feb. 1. Cruz declined to comment for this story.

It's hard to know exactly how much attention Cruz pays to Mercer's views, but he's breathed new life into one of Mercer's pet issues. During two nationally televised debates last fall, Cruz called for a return to the gold standard. "We had it for 170 years of our nation's history and enjoyed booming economic growth," he declared in November.

A few weeks later, Cruz paid a visit to the Owl's Nest for Mercer's annual Christmas bash. The historical-themed parties have become legendary in Republican circles: Hundreds of guests from the family's political, business, and charitable endeavors gather in elaborate costumes, entertained by performers shipped in from across the country. Last Christmas's theme was the end of World War II. A tank greeted visitors arriving at the estate; the dining tent was set up as a mess hall, where a trio impersonating the Andrews Sisters sang Boogie Woogie Bugle Boy and In the Mood. In the library, visitors peered at a piece of the USS Arizona retrieved from the wreckage of Pearl Harbor and a wedding dress made of parachute silk. Mercer was dressed as General Douglas MacArthur. Ted Cruz, in a threepiece suit, came as Winston Churchill.

Back in Oregon, Robinson has been collecting his latest round of urine samples. Since his loss in 2010, he's run two more unsuccessful campaigns for Congress, each time with six-figure financial support from Mercer. He doesn't rule out a fourth attempt this year. If it happens, he says, he won't call his friend for help. Mercer's money will know where to find him.

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In 1976 the win changed forever w California was jud

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By Peter Robison and Vernon Silver

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Photographs by Lucas Foglia



a Sunday morning in Rome, a couple dozen locals gather in an orchard of some 50 olive trees planted above ancient catacombs. The owner has offered lunch in exchange for help stripping the olives so he can get the harvest to a nearby press as quickly as possible. They begin by spreading a circular net around the trunk of a 12-foot-tall tree. Children scamper to the treetop to yank clumps of olives with their fists. Adults below pull fruit off the lower limbs with small rakes, taking care not to stomp on the piles accumulating at their feet. After 15 minutes, the hail of olives tapers off. The net is lifted and the fruit dumped into a small plastic crate-enough for perhaps a liter of oil. The gaggle moves on to the next tree. By the time the sky gets that glow of an Italian day's end, the stronger of the pickers are loading the crates onto a trailer hitched to a Range Rover bound for a frantoio, or mill, where the olives are to be pressed into golden-green oil.

This farmer is a hobbyist, a weekend artisan. But even at much larger operations, in Italy and across the Mediterranean region, the techniques aren't dramatically different. The height of the technology is a tractor with a vibrating arm that wraps around the trunks of the trees.

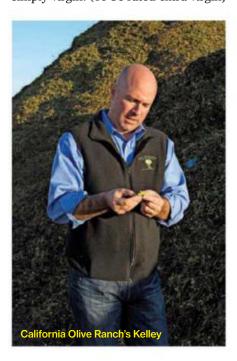
Across the Atlantic, however, an 18-year-old company called California Olive Ranch is upsetting tradition and muscling into the ancient industry by fixing the tree itself.

The company's 2,200-acre orchard, an hour north of Sacramento, is an industrial marvel. The 1.3 million trees there are more like bushes, 6 to 10 feet tall and planted in neat, tight rows. The density lets a two-story mechanical harvester straddle the trees and strip away the olives to a conveyor that drops them into a truck, which delivers them to an on-site mill that can press 3,200 gallons of oil an hour. No olive is touched by hand. California Olive Ranch, a privately held company, estimates it accounted for 65 percent of the olive oil produced in the U.S. in 2015.

Traditionalists sneer at the idea of factory farming in the world of olives. "Some people wonder whether the olive oil produced from these kinds of trees will have such an appealing and varied taste," says Jean-Louis Barjol, executive director of the International Olive Council (IOC), a Madrid-based organization that represents the primarily Mediterranean producers accounting for 98 percent of world output. "It is rather a question of specialized vs. commodity product."

Gregory Kelley, chief executive officer of California Olive Ranch, says it's the mainstream sellers that need to defend the quality of their products. Europeans, he says, have long sold their dregs to unsophisticated Americans, like jug winemakers did in the 1970s. In a strategy said to be either self-defeating or brilliant, depending on who's talking, Kelley often rails about what he calls the olive industry's dirty secrets. He says much of the socalled extra-virgin oil sold in the U.S. is of unreliable provenance: adulterated with cheaper oils, processed with excessive heat that strips out healthful properties, or flawed by sloppy harvesting that can cause fermented or rancid-tasting oil. "In food service, it's a cost center, so there's pressure even in fine restaurants to buy crappy olive oil," Kelley says.

These are not merely the claims of an arrogant arriviste. The olive oil industry has been rocked by fraud investigations, most recently in November, when a prosecutor in Turin, Italy, said he was pursuing charges against producers whose extra-virgin oil had tested simply virgin. (To be rated extra virgin,



oil must have a fruity, bitter, or pungent flavor, in addition to free acidity lower than 0.8 percent, and exhibit none of 16 official taste flaws; virgin oils may have acidity as high as 2 percent and a limited number of taste flaws.) In a peculiarity of the industry, the alleged fraud results were found not in chemical tests, but through tastings. The probe was conducted by a special branch of the Italian carabinieri, the Nuclei Antisofisticazioni e Sanità. Known as the N.A.S. and cross-deputized as health inspectors, specialists in the anti-adulteration unit are trained to detect bad oil. The agents' prime investigative tools are little tasting glasses, tinted blue to obscure the color of the oil.

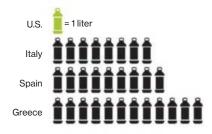
At the same time, Italy's antitrust authority announced its own probe into allegedly unfair trade practices of seven brands, including the well-known Bertolli, owned by Madrid-based Deoleo. The allegations again were based on oils lacking extra-virgin qualities, in this case as assessed by experts at the Italian customs agency, which also had a role in the Turin tests. The news splashed across Italian front pages. (Deoleo says its bottling records show its oil complied with European Union chemical and sensory standards as extra virgin and that it has followed the law and is cooperating with the authorities.) Agriculture Minister Maurizio Martina reassured Italians in a Nov. 10 statement about the integrity of the country's olive oil. His own inspectors had done 6,000 inspections and made seizures worth €10 million (\$12.5 million) in 2014, he said, and had stepped up enforcement recently. "It's now important to clear things up and look after consumers and the thousands of honest businesses that are today occupied with the new production season," Martina said.

There's more at stake than just national pride and identity. Italy exports billions of dollars' worth of olive oil, including hundreds of millions to the U.S., the world's third-largest olive oil market, with \$2 billion in sales. Brands that trade on an Italian identity dominate. Many of the best-selling oils, legally labeled "imported from Italy" or "packed in Italy," with images of the country's flag or hearty peasants, are made from olives grown in Greece, Spain, or Tunisia and then shipped to Italy for processing. The U.S. is that rarity-a rich market with room to grow. It's awash in celebrity chefs, reality cooking shows, and cookbooks, yet 6 in 10 Americans never buy olive oil. Consumption in the U.S. has tripled

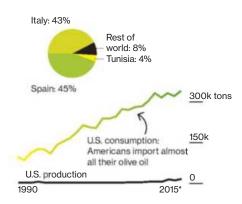
A Pressing Matter: The Olive Oil Trade

Per-capita olive oil consumption, 2015*

Americans don't use a lot of olive oil, but demand is growing. It's flat or negative in the European countries that consume the most.



Where the U.S. gets its olive oil



since 1990, compared with a doubling worldwide, and is still only 0.8 liters per capita—one-tenth of what a typical Italian uses in a year.

California Olive Ranch is trying to do with olives what California did with wine. It's marrying a fastidious, technology-driven approach-Kelley worked at several Silicon Valley tech startups-with California's self-appointed role as the world's regulator. Prompted by Kelley's lobbying, the state in 2014 established chemical standards for olive oil stricter in some respects than those of the IOC, which was established under United Nations auspices in 1959. This month, New World producers are expected to announce the creation of a rival organization, the World Olive Oil Trade Group. Members may include such non-IOC countries as Australia, New Zealand, and the U.S. The group could press globally for more standards like California's.

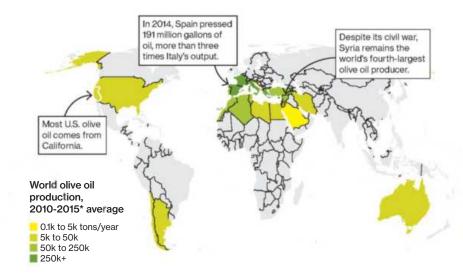
The question of quality is being answered in a way that echoes the moment in 1976 when a chardonnay from Chateau Montelena in Napa outscored its French rivals in a blind tasting that came to be known as the Judgment of Paris. In November, Cook's Illustrated magazine released its closely followed recommendations for supermarket olive oils. Tasters in blind tests sampled the oils plain, with bread, over mozzarella and tomatoes, and in a vinaigrette drizzled on salad greens. They gave their top ranking to California Olive Ranch's Everyday Extra Virgin, which they said was "fragrant" and "fruity," with a "complex finish." An Italian brand was also recommended. The next eight oils, all imported, were recommended "with reservations." They were described with

such words as "mild," "dull," "medicinal," "thin," "stale," "greasy," and "flat." As one taster said of a Bertolli extra virgin: "Nothing special. Could be vegetable oil in here."

The day after his harvest, the farmer in Rome drives his fruit to the press, then watches closely as the stainless-steel machinery does its work. Hobbyists are often concerned, mostly for sentimental reasons, that the juice coming out the other end is actually theirs and not the previous customer's batch. He leaves after a few hours with a 50-liter tub of oil.

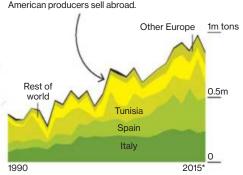
Not all olive oil coming through Italy's presses and bottlers has such perfectly documented provenance. Say the next producer at the frantoio isn't a hobbyist. Say he's a working farmer who trucks in his olives, then sells the oil to a wholesaler or a local agricultural cooperative. His is added to the oil of other farmers, and that's where the world of olive oil becomes murky. It can be hard to know where the liquid comes from or what's in it. Testing is expensive, so the industry relies largely on the honor system.

The business has been subject to scams, most infamously in 1991, when thousands of tons of Turkish hazelnut oil were sold as Greek olive oil, according to Tom Mueller's 2011 book, Extra Virginity: The Sublime and Scandalous World of Olive Oil. Such blatant cheating isn't common—but dilution of good olive oil with cheap vegetable or seed oil isn't unheard of. (In the case of Bertolli, aside from a snarky taster's comment, nobody has alleged such adulteration, and the parent company points out that taste testing is subjective.) Improper storage is a bigger



World olive oil exports

The U.S. accounts for just 1 percent of global olive oil exports. Mexico and Canada buy most of what



problem. Exposing oil to heat or light makes it bland and also destroys the cancer-fighting polyphenols that are the basis of its reputation as a promoter of good health.

California Olive Ranch positions itself as the New World answer to these problems. But its own roots are in the Old World. The company is owned mostly by Spaniards who, in part, just wanted to sell more trees. In 1986 a Catalan construction magnate-turned-gentleman farmer named Carles Sumarroca was frustrated at how long it was taking to graft peach trees on his estate outside Barcelona. His weekend chats with an agronomist eventually developed into Agromillora, the largest nursery in the world for stone fruit trees.

Agromillora didn't view olives as a

particularly attractive market; the trees can live for 1,000 years, so they don't need to be replaced often. Then one day, as lore has it, Sumarroca looked out over his vineyards and noticed a mechanical grape harvester systematically stripping the fruit. Nearby, at a neighbor's olive orchard, he saw men picking by hand. Sumarroca wondered if a grape harvester could do the same work for olives. His managers told him about a variety called arbequina, which grew like a bush.

Their experiments led to a production method now known as super-high-density, with as many as 900 trees planted per acre, eight times what's typical. José Ignacio Romero, an acquaintance of Sumarroca's in the Catalan business community, began searching for farmland in California, where, he reasoned, they could start from scratch.

"California is producing, from an agricultural point of view, everything," Romero, 74, remembers, sitting in his wood-paneled office on the eighth floor of a modern building in a leafy Barcelona neighborhood. "They had not developed olive oil."

The partners, together with Romero's brother and another friend, invested \$10 million initially. They bought 733 acres near Oroville, Calif., where, in the 1700s, Franciscan missionaries from Spain had planted some of the first olive trees in North America.

To run California Olive Ranch, they brought in former managers from Blue Diamond Growers, the almond cooperative that made the nut a success with its can-a-week marketing. One of them, Alan Greene, recalls asking his wife to sample some of the company's oil. She reported there was something wrong; it tasted like olives. With so many Americans accustomed to flavorless oils, Greene recommended that the grower stick to private label and bulk supply.

Then, in 2006, Kelley turned up for an open house. After taking a couple of years off to backpack, he'd been consulting and was living in nearby Chico. Romero hired him as chief financial officer, then made him CEO in 2007. Kelley, 44, has the zeal of a man who's found his true love in mid-career. His two young children slather their toast with olive oil instead of butter; the household goes through a liter a week.

Kelley quickly decided that the company should create its own retail brand; otherwise, there would be little to distinguish it from the sea of imports.

At first, buyers told him nobody wanted oil from California. "A lot of people looked at this business and thought we were crazy," he says. The flagship Everyday Extra Virgin is now sold in 25,000 stores. Unusual for a brand trying to cultivate cachet, it's marketed by Kelley to Walmart, which sells a 500 milliliter bottle for \$7.49, and Whole Foods Market, where it costs \$9.99.

Kelley's retail push coincided with a growing fascination with the health benefits of the Mediterranean diet. Antioxidants in olives, present in the highest concentrations in the best extravirgin oils, reduce the risk of cancer. The TV chef Jamie Oliver developed such a fetish for drizzling a "lug of olive oil" on his dishes that it inspired parodies.

In 2008 the University of California at Davis created the Olive Center, part research center and part industry advocate. Funding came from California Olive Ranch and other domestic oil producers. Dan Flynn, a former state legislative consultant, runs the organization.

The Olive Center planted a flag in 2010 when it issued a report that bared, and greatly exacerbated, the growing schism between traditional growers and the upstarts. Laboratory tests, the center said, had found that 69 percent of imported brands sold as extra virgin in California supermarkets didn't meet international standards. Hundreds of media outlets in the U.S. ran stories. Flynn says a half-dozen trial lawyers called, sniffing for opportunities to sue importers.

Dr. Mehmet Oz invited Flynn onto his TV show in 2013, naming extra-virgin oil "among the biggest lies" at the supermarket. "It infuriates me," Oz said. "I'm buying olive oil to make my family healthy, and I've got some news for you, folks—we're not getting it." Audience members cringed as Flynn said professional tasters had used words like "waste pond" and "baby diaper" to describe the worst oils.

Importers still complain about the report's impact. Little mentioned in all the coverage was who funded it: California Olive Ranch, the California Olive Oil Council, and another California producer, Corto Olive. And the 69 percent figure wasn't from chemical tests, but from a tasting panel. New World producers "have a history of, I would say, bending the facts to support their sound bites," says Eryn Balch, executive vice president of the North American Olive Oil Association, which represents imported brands including Bertolli, Filippo Berio, and Pompeian.



Her group's own testing, she says, shows that only 2 percent of oil in the U.S. by volume is adulterated. (Flynn responds that chemical tests confirmed the tasting results in the majority of cases.)

When California, with one-tenth of 1 percent of the world's market, adopted chemical standards stricter than the IOC mandates, it made waves in the Old World. The rules, which for now apply only to California producers, also barred the use of the marketing terms "pure," "light," and "super virgin" on labels. The Italian consulate general in San Francisco, a Spanish trade attaché, and representatives from a half-dozen importers traveled to Sacramento to oppose the standards at a hearing of the California Department of Food and Agriculture.

Most of them said, politely, that Americans don't know what they're talking about when it comes to olive oil. "What the United States, including the state of California, needs relative to olive oil is education," said Gabriel Estevez, chief operating officer of Sovena USA, based in Rome, N.Y., the largest importer of olive oil in the U.S. Many of the people testifying against

the standards complained that all the talk of bad product would only boomerang, turning Americans off olive oil completely.

It's Day 61 of the harvest in California, which means it's a banner year: Typically, the harvest is two weeks shorter. Kelley is in no mood to be a statesman. Over lunch, he reaches seemingly offhandedly for a common supermarket brand and sips it. "Crayon," he pronounces. "It's not hard to find rancid oil, unfortunately."

Kelley says California Olive Ranch had sales of \$82 million in 2015. Within three years, co-founder Romero forecasts, sales could more than triple, to \$250 million.

Limited by its harvesting techniques to three varietals—arbequina, arbosana, and koroneiki—the company sought to broaden its lineup last year by acquiring Lucini, a Miami-based importer whose oil was, as it happens, the top-rated Italian brand in the *Cook's Illustrated* report. The deal also brought in Molinos, one of the largest food companies in Argentina, as a shareholder.

Even the old guard concedes that super-high-density harvesting, in use for

just 5 percent of Europe's volume, may eventually catch on. Mechanical harvesting costs about one-seventh as much as picking by hand. "It will probably be the future in Italy and all over the world," says Renato Calabrese, general manager of Pietro Coricelli, an olive oil producer in Spoleto that exports to more than 100 countries.

Soon after an Oxbo harvester has taken a half-hour to swallow 7 tons of fruit from an acre of trees—work that would have taken 15 people a day by hand—the olives are at the mill in California. After an evaluation of temperature, moisture content, fat content, and fruit size to ensure they aren't fermenting or oxidizing, the olives, pits and all, are churned into paste, which is run through a centrifuge to separate the oil. A stream of golden oil the diameter of a garden hose pours into a vat.

Kelley dips in plastic cups and hands them around. He drinks. "That's good oil," he says, remarking on the buttery, mellow notes of riper olives late in the harvest. "Really good oil," the burly head miller says, nodding.

—With Sergio Di Pasquale

COFFEE GROUNDS CAN SAVE A LIFE.



MIND YOUR MEDS Prescription drug abuse kills more teens than heroin and cocaine combined. So if you have expired or unused meds, conceal them in an undesirable place like used coffee grounds, and throw them in the trash.

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he U.S. Postal Service seems to have structured its hours so that no matter what job you have, it's always closed by the time you're off for the night. Banks and dry cleaners: same thing. My work-appropriate skirts and sweaters pile up until all I'm left with in the morning is a pair of ripped jeans and the thought, Is there such a thing as business extra-casual? Life would be so much easier if someone would just clean my house and run my errands. But paying a person to be at my beck and call isn't something that fits easily into a working-woman's budget. It's a shame, because I have a lot of becks.

Then I heard about Hello Alfred. For a reasonable weekly fee, the service will send someone to tidy up your house, deliver groceries—and yes, go to the post office and dry cleaner on your behalf. Two Harvard Business School students, Marcela Sapone and Jessica Beck, came up with the idea in 2013 after they discovered that late-night studying and keeping a clean apartment didn't mix. When I talk to them at their tidy Manhattan headquarters, Sapone explains that inspiration came from a pile of Beck's dirty clothes.

"I wasn't that messy!" Beck objects.

"You don't remember the pile of laundry the size of your kitchen table?" Sapone asks, then pauses. "Actually, I'm not allowed to say that in interviews anymore, because her mom asked me to stop."

Hello Alfred's official origin story is that Sapone, 29, and Beck, 30, contacted dozens of professional women they admired and asked them how they juggled a personal life and a demanding career. "Every single one of them had a housekeeper," says Sapone. And if you can't afford that? Beck and Sapone started experimenting. They hired a cleaning woman off Craigslist and asked her to run errands for them. Soon, their friends wanted their errands run, too. "We thought, This is something people really need," Sapone says. The company went through a number of iterations-a remote-concierge service, on-demand doormenbefore they settled on the butler concept. They named it after Batman's jack-of-all-trades and in 2014 relocated from Boston to New York to formally launch the company.

Hello Alfred has raised \$12.5 million from venture capital firms including Ron Conway's SV Angel (Pinterest, Casper) and

with plans to expand to Chicago and San Francisco in the next few years—one small part of the larger on-demand economy that now helps us not only clean our apartments, but also get around or order a large pepperoni. (Try the Push for Pizza app, because a phone call is too much work.)

On its website, Hello Alfred advertises its butlers, or Alfreds, as spirited go-getters willing to do almost anything for a client as long as it's legal. Each Alfred makes weekly visits to 8 to 10 homes for basic tidying tasks; anything beyond that must be requested in advance. There are two tiers of service: \$32 per week gets you one visit, and \$59 gets you two and a guarantee that your toiletries and other essentials will be restocked before you run out of them. "We keep any extra fees to a minimum and always let you know in advance," the website promises.

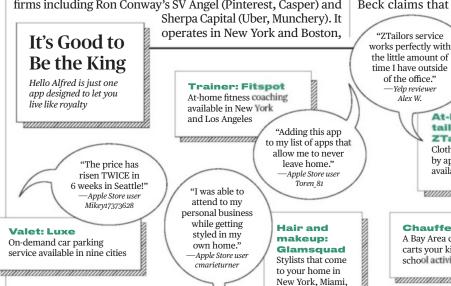
It sounded a little too good to be true. "There's an art to figuring out what another person wants," says Ryan, a longtime personal assistant to a movie star whose name I promised not to reveal, lest the star learn he talked to the press. Ryan isn't affiliated with Hello Alfred, but he's a one-man version of it. He picks out the actor's clothes before red carpet events and keeps the fridge stocked, though his boss only eats takeout. "It takes about a year to really know a person well and be able to anticipate their needs before they even think of them," he says. "It's not a process you can rush."

Ryan's cautionary tales didn't dissuade me. I decide to sign up for Hello Alfred.

As part of the top-tier service, I'm asked for a brief rundown of my habits, so an Alfred can get a better sense of who I am. A few days later, a manager comes to my Brooklyn apartment to quiz me on my preferences: I prefer two-ply toilet paper; I buy organic meat but not organic vegetables; I'm pro-gluten and antikale; and my dog eats Newman's Own dry food because, as I helpfully explain, "Paul Newman was hot." (To avoid any special treatment, I don't helpfully explain that I'm a journalist.)

Then I'm assigned an Alfred. Her name is Lauren. I never meet her-she uses a set of spare keys to drop in while I'm at work-but the company tells me she graduated recently from Tufts University with a degree in economics and entrepreneurial leadership. That's pretty typical for an Alfred: Beck claims that only about 5 percent of people who apply

> are accepted; most of the résumés come from college graduates in their 20s or 30s who want to supplement their income, because being an actor, artist, designer,



of the office." Yeln reviewer Alex W. **Bartender:** At-home Saucey tailoring: Booze delivery **ZTailors** service in San Clothing alterations Francisco by appointment; available nationally **Chauffeur: Shuddle** A Bay Area car service that carts your kids to their after-

"ZTailors service

school activities

"Did I mention that Saucey drivers are hotter than Ryan Gosling and Channing Tatum combined?" -Apple Store user Bleunoir

"I absolutely hate them." Apple Store user Shinvpearl143

or chef doesn't pay the bills. ("We also have a lot of stay-athome moms who need to get out of the house," she adds.) The startup pays \$18 to \$30 an hour, offers health benefits, and, unlike most on-demand companies, hires people as full-time employees rather than contract workers. Beck and Sapone say that, on average, Alfreds work for the company for about eight months; currently, there are more than 100. That might seem like rapid turnover in another sector, but it isn't in the "gig" economy or for a business this young.

The first time Lauren visits, she buys everything on my grocery list, drops off my dry cleaning, Swiffers my floors—and forgets to lock my apartment. Before her second visit, I submit

other workers or if they're left in my apartment unsupervised.

Conversations with other Hello Alfred customers confirm that they all fit the same consumer demographic: young, single professionals who are early adopters of new technology. Within this community, Hello Alfred is met with near-universal praise: "It was a little bit rocky at first, but since then it's been very good," says Caroline McCarthy, 31, who works at a digital advertising firm and used Hello Alfred recently to assemble gym equipment and hang pictures (the work was subcontracted to TaskRabbit). Dave Craig, 35, uses Hello Alfred even though he lives in Colorado, where it doesn't operate. Instead of getting home visits, he uses the app as a middleman to manage all the other on-demand services he subscribes to. "I use TaskRabbit, I get my groceries delivered—Alfred manages all that," he says. "It's amazing!"

Lauren remains my Alfred for a month, then quits to launch her own startup. Another Alfred named Meredith takes her place. Meredith is—surprise!—an aspiring actor. But she knows how to

I ask my Alfred to take some books to be resold. She uses an Uber to

deliver themand I'm charged an

extra \$65

a request for her to take more than 90 books to be resold at a local bookstore; Hello Alfred charges me an extra \$65 because she used an Uber to deliver them. This is more than I made from selling the books—and not exactly what I'd call "minimum," because it would have cost about \$20 for a cab to the bookseller. Oh, and she leaves the door unlocked again.

And so it goes for several weeks. My grocery list is always fulfilled,

and my dry cleaning gets picked up on time, but many of those extras that Hello Alfred promises are either poorly done or cause a hassle. On the day of one of Lauren's visits, I forget my gym shoes at home—I've been trying to work out more, because I now ostensibly have all this free time—but when I ask if she can deliver them to me, I'm told by a manager, "Unfortunately, due to Lauren's schedule, she won't be able to bring your shoes today." After some back-and-forth, Hello Alfred does get them to me, in a \$33 Uber.

This, it turns out, is the secret to Hello Alfred—it outsources all those add-on tasks to a third party. It uses Instacart to buy my groceries, MyClean to clean my apartment, and Uber as a carrier because, Sapone says, it's easy to track a ride's progress. I'm not even sure who's leaving my door unlocked; because I'm at the office, I don't know if Lauren oversees the

lock a door. Once, Meredith leaves me two bottles of wine when I only purchased one. (I don't know where the second came from, but why ask questions?)

After two months, I feel like I've finally gotten a handle on how to work with Hello Alfred. My Instacart grocery bill is no higher than if I went to the store myself, and with the dry cleaning service, I haven't worn jeans to work in weeks. But I'm also incurring more than \$100 in Uber fees every month for a few hours of free time a week. So I cancel the service, give Meredith the free bottle of wine as a thank-you, and start running my own errands again.

Because, if I'm being honest, the real reason I never attend to all of these matters isn't because I'm too busy. It's because on Saturdays, when my dry cleaner is open, I'd rather sleep late and go to brunch. **3**

The cold can do a number on your 'do. Here's how to battle back By Aja Mangum



* Skip shampoo Instead of soaping

up, rinse with warm water to get rid of excess oil and sweat.

"In smaller, more confined spaces like your desk, it can help the air maintain a good moisture level,"says celebrity stylist Paul Norton.

A leave-in conditioner and a weekly treatment mask restore luster to dried-out locks (see opposite page).

Don't

They're known to exacerbate itchy-scalp issues, says tricholo-gist (aka hair doctor) Anabel Kingsley.

- High temperatures dry out hair, leaving it vulnerable to damage.
- It's tempting when temperatures are below freezing, but hot water strips natural oils.

The Avocado Method

Salvation awaits at the supermarket

Whisk together:

- 1 tbsp. conditioner ½ oz. castor oil
- 1 ripe avocado 1 oz. whole milk

Refrigerate overnight. Apply mixture to hair, paying particular attention to the ends. Cover head with a damp towel or shower cap and allow to sit for one to two hours, or overnight if possible. (In our test, the mixture rinsed out easily–and didn't smell as



"If your hair has length to it, hat hair will be a problem," says Chris Salgardo, president of Kiehl's USA and author of Manmade: The Essential Skincare & Grooming Reference for Every Man. You don't have to go full buzz-he recommends talking to your barber about this classic, crush-proof cut.



Ask for an electric clipper with a No. 2 guard to trim the back and sides of your head



Leave the top a little longer, but make sure there's a fade



A few scissor snips add texture up top



Using a razor to clean up around the neck finishes the look



PHOTOGRAPHS BY ADAM KREMER FOR BLOOMBERG BUSINESSWEEK; HAIR AND MAKEUP:



Plastic combs cause static electricity. **GHD**'s detangling comb (1) (\$22; ghdhair.com) conducts it away from strands. To calm things down, spritz old-school Static Guard (2) (\$3.29; target.com) on a brush—or give your head a wipe-down with a Mrs. Meyer's dryer sheet (3) (\$7.99; mrsmeyers.com). (\$28.50; kerastase-usa.com) are pricier, but you'll look less weird using one. For short hair, a flexible pomade like Fell (\$22; fellowbarber.com) helps with a style reset. Keep a weightless, dry mist around for a midday moisture boost; try Oribe soft dry conditioner spray (6) (\$36; oribe.com). Tame flyaways, add shine, and kill frizz with a dab of R+Co's Tinsel smoothing oil (7) (\$24; randco.com).



Mask the **Problem**

Work into wet hair. then rinse

Aveda dry remedy moisturizing masq aveda.com; \$36 For full effect, Aveda recommends applying once a week during dry months, but hair was smoother after just one try. Bonus: This one stays in for only five minutes. **

leonorgreyl-usa.com; \$145 This mask left us soft and silky. That may not be enough to justify the price, but it does have a luxurious texture and a floral scent. **

Davines essential NouNou mask

davines.com; \$32 The secret ingredient here is Fiaschetto tomato, which helps brittleness, especially for treated hair. Its light consistency makes it great for fine locks, but it's not the best for controlling frizz. * * * *



'Tis not the season for delicate curls. Erica Engstrom of Philadelphia's Rittenhouse Spa & Club suggests a sturdy variation on the bun.

("sheen-yon")



Part hair down the back and separate into two sections; tie one to the side to keep it out of the way

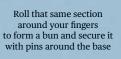


Comb the other section, then clip it with bobby pins near the nape of your neck





Untie the original section, twist it into a coil, and wrap it around your pinned roll; secure with more pins and tuck in the ends



FIX YOUR DANGE FITTING ROOMS

Been in one recently? Doesn't matter—they're the same torture chambers they've always been By Kim Bhasin

aura Stampler, 28, prefers shopping for clothes right after happy hour. It takes a couple of whiskey gingers or gin and tonics, the novelist from Manhattan says, to deal with the depressing reality that is a dressing room. "I don't know if it's the lighting, or I'm not feeling great about myself," she says, "but so much of the time, fitting rooms can feel more unflattering than a normal mirror."

You don't have to be buzzed to relate. The cramped stalls where we decide how we'll present ourselves to the world bring out our worst anxieties—I'm too fat! Too short! Too fat *and* too short?—right when we need them calmed. "We go into dressing rooms knowing we're not perfect,"

says Jennifer Baumgartner, a clinical psychologist and the author of *You Are What You Wear: What Your Clothes Reveal About You.* "And it's amplified."

Which is jeggings-level insane, given that retailers' one competitive advantage over online shopping is that customers can try on what they might buy. Dressing rooms should be Shangri-Las, not dark, dirty shoeboxes where we try to avoid getting stuck by a stray safety pin.

And yet it's 2016, and the dressing room isn't much different than it was when people bought clothes at the general store. Sure, retailers have recently started packing fitting rooms full of fancy technology. Macy's and Zara are testing smartphones and tablets that let shoppers select additional items to try on (a technological marvel that Applebee's introduced tableside in 2013). Nordstrom is experimenting with interactive mirrors that allow you to browse product reviews or summon help. But so what? Especially if there's no one to ask for help, no hook to hang your coat on, a janky curtain that only half-closes, nothing to sit on, no ventilation, and fluorescents that would diminish Beyoncé's radiance. Who wants to spend even *more* time in these panic rooms?

Retailers should have better answers to these questions by now. They affect the bottom line: A shopper who tries clothing on and receives assistance doing so is likely to spend about \$130, vs. about \$48 for someone who stays on the sales floor, according to fitting room consultant Alert Tech, which advises companies such as Nike, H&M, and Calvin Klein on design, location, and staff training.

But word hasn't gotten around, says

Marge Laney, Alert Tech's chief executive officer. It's challenging to convince retailers (and executives) that sticking shoppers in an unattended, barren box is bad business; despite the data, the return on investment for something like lighting is subjective. "They've been run this way forever," Laney says. "Fitting rooms are psychological land mines."

This may explain why some retail suppliers have resorted to psy-ops. A Sand City, Calif., manufacturer called the Skinny Mirror claims its product makes a person look about 10 pounds thinner, which it said would translate into higher in-store spending. But an appearance on ABC's *Shark Tank* last year didn't land it a deal–Kevin O'Leary called the mirror a

"sham"—and critics questioned if it might cause more harm than good. It's not like you won't notice, and sigh, when a sweater looks suspiciously tighter as you're getting ready for work one morning. (The Skinny Mirror's founder wrote in a blog post: "Our brand was highly misrepresented.")

Technology isn't a bad thing, of course, and some merchandisers are making good use of it. In a partnership with EBay, Rebecca Minkoff stores are testing rooms that let patrons flip through lighting templates to show what they'd look like in an office, during the day, or at night. Through radio-frequency identification, screens automatically know what clothing is being tried on and show customers different colors and sizes. Interactive walls on the sales floor even let shoppers request help to prep a fitting room, have items delivered to try on, or order drinks, including Champagne. Just in case you couldn't make happy hour ahead of time. B



A companion app lets you set the lamp to flick on at a preset time.

> An air-quality sensor measures volatile organic compounds, cuing you to open a window or turn on a fan when the concentration gets too high.

During waking hours,
Genesis gives off a high
concentration of cool blue
tones—even more than
therapy lights for seasonal
affective disorder—that trigger
the alertness hormone
cortisol. The lamp's warmer
evening glow causes
the brain to release sleepinducing melatonin.

GOODNIGHT MOON

If this lamp helps astronauts wake up and fall asleep, it can probably do the same for you on earth By Corinne Iozzio

ur bodies evolved to rise with the sun and rest with the moon, and then the lightbulb ruined it all. Artificial light—emitted by everything from office fluorescents to phones—contains sun-replicating blue wavelengths that keep us up into the wee hours, which can potentially lead to obesity, depression, and other diseases, as well as what a doctor might describe as general crankiness.

To remedy this, you could crawl into

a hole every night at sundown, a not altogether unappealing way to avoid Wi-Fi and work e-mail; or invest in a smarter light source. Like the Lighting Science Group's new Genesis LED lamp, which emits different tones at different times of day to mimic the effect of natural sunshine and twilight. "It allows us to have light at night, to do things we think are useful—and maybe still go to sleep," says Fred Maxik, the company's founder.

The Genesis works best when other

light sources aren't interfering, but stick it on your desk or bedside table and you'll still reap the benefits. In our test, it was bright enough to light a room on its own and had us wide awake at 6 a.m. NASA says the technology is so effective at regulating our rhythms that it's installing a customized version on the International Space Station, where astronauts experience a possibly crazymaking 16 sunrises and sunsets every 24 hours. \$300; available for presale starting Feb. 1 at lsgc.com



MAKING MORE 'MURDERER'S

We're in the middle of a true-crime boom. Can the networks keep up? By Reyhan Harmanci

nless you've been in solitary confinement the past few weeks, you know about the success of Netflix's 10-part documentary series Making a Murderer. It follows a Wisconsin man named Steven Avery who was exonerated for a sexual assault he didn't commit-convicted in 1985, he was released in 2003-only to be found guilty again in 2007, this time for a murder he might not have committed, either. It's gripping, shocking, nauseating, and addictive-for the procession of injustices on display and for the filmmakers' tenacity.

Netflix hasn't released audience numbers, but the series is a hit; more than 45,000 amateur sleuths are tracking the case on a Reddit message board. Even before it became available in mid-December, the doc earned comparisons to two other recent true-crime smashes: the podcast *Serial* (about a young woman's murder, supposedly at the hand of her high school ex-boyfriend, Adnan Syed) and the HBO miniseries *The Jinx* (in which the possible killer and definite weirdo Robert Durst appears

to confess to several murders). *Serial* has been downloaded more than 40 million times since its debut a little more than a year ago; *The Jinx* pulled in more than a million live viewers.

The true-crime genre is as old as original sin,

but it's no surprise it's flourishing. Stories of police brutality are frequently on the front page, and as much as these series are about individuals, they're also about the frailty of our justice system, with coerced confessions (which underpin one of *Murderer*'s main storylines),

questionable eyewitness accounts (on which Syed's case hinged), crooked cops, divided juries, racist sentencing guidelines, and no accountability for ruining or ending people's lives. None of these problems is new, and yet they provide perfect grist for us to sound off on social media.

But can Amazon.com, HBO, Netflix, the networks, and other content providers sate our appetite for injustice? It's difficult to imagine they're in a position to suddenly crank out these series. This kind of investigative work takes years to produce: Murderer documentarians Moira Demos and Laura Ricciardi began working on the project more than a decade ago as graduate students in Columbia University's film department, and it was in Netflix's production pipeline for two years. There are risks involved with such a big commitment of time and resources-namely, that it won't pay off. *Murderer* only looks like a no-brainer in hindsight. Reed Hastings, Netflix's chief executive officer, recently told Re/code that he recalled thinking, "This is going to be 8 or 10 hours about a murderer? I hope it wins some awards, because it's not going to be popular."

Part of what's made it so popular is, no doubt, the tenor of the show's story-telling: *Murderer* heavily implies that Avery is innocent and that his nephew, Brendan Dassey, who was also convicted of murder, is a victim of investigator misconduct. Within days of the saga's premiere, petitions to free them appeared on Change.org and the White House website. As of mid-January, the sites had received more than 400,000 and 100,000 signatures, respectively.

This is the kind of engagement that networks dream about—which helps

explain why FX has made a major marketing push for its scripted miniseries about the O.J. Simpson trial, airing in February. And why SundanceTV just announced it would make *The Staircase*, its 2005 Peabody Awardwinning series about a

PRODUCERS HAVE TAPPED INTO OUR APPETITE FOR INJUSTICE VINTAGE

What kind of consulting do you do? I help artists select work for shows. I recently helped a startup arts organization with networking. I write arts reviews, too.

AMY RITCHIE Johnson

41, art consultant and writer, Richmond, Va.

VERDALINA

VINTAGE

FAMILY HEIRLOOM

Do you feel the need to dress artsy?

Much less so than when I worked at Candela. It's a photography book press and gallery. I was associate director and am still very much involved there. I just edited their most recent monograph.

What's Candela's mission?

To bring great photography to Richmond that Richmond wouldn't otherwise see, so we rarely show local photographers. Your rings are beautiful.

The necklace is my sister's ring she passed away a few years ago. And my cameo ring is something my parents gave to me when I was young.

FAMILY HEIRLOOM

There seem to be a lot of multihyphenate freelancers in the arts. You have to hold a lot of baskets to make a living, especially in a smaller art market.

NUTHATCH

J BRAND

What's your look? Pants, jeans, dresses. I buy a new pair of boots every fall, because I wear 'em down pretty well. traditionally dressed, and then there are the students. They're having way more fun with fashion than the rest of us. In New York, it goes across age lines, but in Richmond, it's the students.

What do people wear

There's an older crowd in Richmond, maybe a little more

to galleries?

CORSO COMO

DARREN HUSTON

President and chief executive officer, Priceline Group

"I managed the college pub, which in Canada is like being big man on campus. It was one of my best jobs ever."



"At Starbucks, [CEO]

Howard Schultz asked me,

'Can we do Internet access

without cords?' because cords

are dangerous around coffee

shops. So I met people

like Steve Ballmer, and he

recruited me."

STARBUCKS

"Everyone was

jumping to the Internet,

and I chose coffee."



Revelstoke Secondary School, Revelstoke, B.C., class of 1983

Trent University, Peterborough, Ont., class of 1989

Harvard Business School, class of 1994



Work Experience

1990-92

Policy adviser on the environment, Department of Finance Canada

1994-98 Engagement manager, McKinsey

1998-2003 Senior vice president for

branded products and new ventures, Starbucks

2003-05 Corporate vice president, Microsoft U.S.

2005-08 President and CEO, Microsoft Japan

2008-11 Corporate VP, Microsoft

CEO, Booking.com

2014-

President and CEO, Priceline Group

With Ballmer, 2011

Life Lessons







In Robson,

B.C., 1977

"I learned how valuable attention to detail is. The Japanese just do things better-they really think of everything."

With fellow Microsoft Japan execs Nobuyoshi Yokoi (left) and Jay Jamison (right) at a Microsoft event in Tokyo, 2007



"We have six brands, including Priceline, Booking.com, and OpenTable. My challenge is to continue growingwe're the third-largest e-commerce company in the world after Alibaba and Amazon."



Vou need to know everyone and everything. Larger is easier." Courtesy subject (3). Alamy (2). Bloomberg (1). Getty Images (2)

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SAP

Run Simple